



**Australasian Society  
for Ultrasound  
in Medicine**

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**ULTRASOUND BULLETIN**

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# From the Editor's desk

This issue of the Ultrasound Bulletin will have interest for all readers and ASUM members.

The ASUM Asia link is an important development described by the CEO. Readers are encouraged to consider the scientific articles including the discussion of production of operative delivery by Dietz, *et al.* Interventional ultrasound is an increasingly important field as described by Gun *et al.*, addressing Implanon implants. Ultrasound technology continues its rapid advance as described by Gun *et al.* Susan Westerway raises some important question on mensuration. Echocardiography readers will find Lisa Hockey's article of great interest. The case studies and book reviews are essential reading.

The Editor notes with great sadness Pru Pratten's passing shortly after her Life Membership Award announced at the ASUM Meeting 2002. The legacy of members such as Pru and Chris Kohlenberg to advance teaching and research in ultrasound will be reinvigorated with new members joining the Research and Grants Committee. Members are encouraged to develop research opportunities and can apply for financial assistance to the Committee.

Members are also encouraged to submit scientific articles for publication in the Bulletin. Instructions for authors can be found on Page 48.

Seasons greetings to all ASUM members and their families. The Editorial team trusts you will have a happy and safe Christmas season.

**Roger Davies**  
**Editor**

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## President's message



I wish to introduce myself as this is my first column as ASUM President. My name is Glenn McNally. I am a specialist obstetrician and gynaecologist practicing solely in the areas of diagnostic ultrasound and prenatal diagnosis. I am a part-time staff specialist at the Royal Hospital for Women in Sydney

and also work in private diagnostic ultrasound practice.

ASUM is fortunate to once again have a dedicated, diligent and hard working Council. Following the recent changes to the Constitution, the size of Council has been reduced to twelve members in order to improve efficiency and focus. A smaller Council, however, will still require the advice and assistance of ASUM's membership to achieve its many goals. New to Council is Roslyn Savage, a Brisbane based sonographer who has agreed to take on the role of Honorary Secretary. She, along with Geoff Stieler and Dr Neil Orr, organized the Annual Scientific Meeting, held in September at the Jupiters Casino on the Gold Coast, which was an outstanding success.

The goals of the new Council will be to consolidate the work of the last Council, particularly concluding the bid to host the WFUMB 2009 Congress in Sydney, further develop the Asia Link Program and reinforce the value and role of the Diploma of Medical Ultrasonography by attaining full accreditation from the Australasian Sonographer Accreditation Registry. ASUM will also attempt to strengthen existing linkages with other medical practice groups within Australia and New Zealand to improve education, common training and possible certification for practitioners in clinical disciplines such as obstetrics and gynaecology, accident and emergency medicine and general surgery. We will also work to improve linkages with other sonographer organizations such as the Australian Sonographers Association.

The last Bulletin featured a photograph on the front cover of the office staff, many of whom may be familiar to you by name but not necessarily by appearance. Dr Caroline Hong has now been with ASUM for over one year and her affect upon the functioning of the Society has been very significant, helping ASUM to better focus on its growth and to achieve its aims.

I am indebted to my predecessor, Dr Stan Barnett, who led our Society with great distinction over the past two years. Stan was President Elect for one year in 1999/2000, President for two years 2000/2002 and remains as Immediate Past President for this current year. During his term of presidency, Stan guided ASUM through many positive changes, making ASUM a relevant and strong Society which is recognized

locally and internationally and has been committed to promoting excellence in medical ultrasound. Stan's achievements include:

1. Initiation and development of the ASUM Asia Link Program. This aims to create stronger linkages within our geographical region, the benefit of which will last for many years.
2. Appointment of the first professionally qualified association CEO for ASUM to support Council and achieve positive change of the functioning and strategic direction for ASUM.
3. Altering the old Memorandum and Articles of Association in accordance with the Australian Corporation Law.
4. Reducing the size of Council to enable a more effective and efficient corporate governance structure.
5. Leading the bid by ASUM to host the WFUMB 2009 Congress in Sydney

This list is by no means exhaustive and, on behalf of Council and members, I would like to express my sincere thanks to Stan for his efforts and commitment to ASUM. Stan continues as the Chairman for the Asia Link Program and should our bid to host the WFUMB 2009 Congress be successful, Stan will be the Convenor for this meeting.

I would also like to take this opportunity to thank Mary Young who recently retired from Council and as Honorary Secretary, a position which she has held for the last three years. Mary has also worked tirelessly to promote ASUM and improve all aspects of the practice of sonography over many years. Mary has also been very active, serving as Chairman, Secretary and Treasurer within the Victorian Branch. On behalf of Council, the ASUM Secretariat and all members, I would like to express our gratitude to Mary for her valuable contribution to ASUM over the years.

Dr Roger Davies has taken over the task of editing the Ultrasound Bulletin. I wish him well and know that the standards created by Dr Rob Gibson will be continued.

The recent Gold Coast meeting also saw the awarding of the initial ASUM Honorary Fellows to Kaye Griffiths AM and Dr Andrew Ngu. These awards recognize their great contribution to our Society but also the expectation they will continue to promote the goals and vision of ASUM.

It is with sadness that I also note the recent death of Pru Pratten. Pru was recently awarded life membership of our Society at the Gold Coast meeting. An obituary written by Stephen Bird appears in this Bulletin and ASUM expresses its condolences to Pru's family, many friends and colleagues.

Best wishes

**Dr Glenn McNally**  
**President**

# From the desk of the CEO



## ASUM 2002

What a fantastic and successful meeting it was! The 32<sup>nd</sup> Annual Scientific Meeting, ASUM 2002, which was held over 4 days from 19-22 September, attracted more than 500 delegates. We are grateful for, to the support from the members who attended the meeting and the support given by

the sponsors and exhibitors. The work behind the scenes from all members of the Organising Committee is also greatly appreciated. It was very exciting for ASUM when Channel 7 News camera crew arrived on Day One and the meeting was featured on prime time news. We hope to see as many members attend our next Annual Scientific Meeting from 4-7 September 2003 in Perth.

## COUNCIL

At the Annual General Meeting of the Society held at Conrad Jupiters, Gold Coast, a new Council was elected. In accordance to the new Constitution, which was adopted at a special general meeting on 21 April 2002. There are now 12 Councillor positions instead of 19, to form a more effective and efficient corporate governance structure for ASUM.

The new Council members are as follows: Dr Glenn McNally, President; Dr Stan Barnett, Immediate Past President; Dr Dave Carpenter, Honorary Treasurer; Ms Roslyn Savage, Honorary Secretary; Dr Matthew Andrews; Mr Stephen Bird; Dr Roger Davies; Dr Charles Fisher (appointed after the AGM); Ms Kaye Griffiths AM; Mrs Janine Horton; Dr David Rogers; Ms Vicki Truelove (resigned for family reasons).

Council at its last meeting held in September also made the following appointments: Chair of DDU Board of Examiners, Dr Christopher Wriedt; Chair of DMU Board of Examiners, Ms Bonita Anderson; Chair of DDU Development and Medical Affairs Committee, Dr Matthew Andrews; Chair of DMU Advisory and Sonographer Affairs Committee, Ms Janine Horton; Chair of Research and Grants Committee, Dr Roger Davies; Chair of Education Committee, Dr David Rogers; Chair of Standards and Safety Committee, Dr Stan Barnett; Expert Liaison/Adviser on Standards of Practice, Dr Cheryl Bass

Council thanked the retired Council members: Alison Lee-Tannock, Maryanne McHugh, Justine O'Leary, Neil Orr and Mary Young. Council also thanked Jill Clarke on her retirement for her work and achievements as Chair of the DMU Board of Examiners.

## PRU PRATTEN

At the Annual General Meeting held on 21 September 2002 at Conrad Jupiters, Gold Coast, Pru Pratten was awarded Life Membership for outstanding contribution to the Society and to her profession. However it was with great sadness that we received news that Pru Pratten passed away after a long fight with cancer, not long after the ASUM 2002 Annual Scientific Meeting. Pru was a regular presenter at ASUM Annual Scientific Meetings and was highly respected in the ultrasound community. Pru had personally said to me at the ASUM 2002 meeting that she was hoping to make it to ASUM

2003 in Perth. She was in such high spirits and was so full of optimism. We mourn the loss of a great educator, a great sonographer and a great friend to many ASUM members and staff. ASUM sends condolences to the family, friends and loved ones of Pru and share with them in mourning the loss of a such a beautiful person. More about Pru is reported elsewhere in this issue of the Bulletin.

## HONORARY FELLOWS

At the Annual General Meeting held on 21 September 2002 at Conrad Jupiters, Gold Coast, ASUM honoured two member as Honorary Fellows. Dr Andrew Ngu was awarded as the inaugural medical Honorary Fellow. Mrs Kaye Griffiths was awarded as the inaugural sonographer Honorary Fellow. Both Andrew and Kaye were recognized for their outstanding contribution to the Society and medical ultrasound. More about Andrew and Kaye is reported elsewhere in this issue of the Bulletin.

## ASUM – ASIA LINK

I was privileged to be invited to attend a meeting in Bangkok recently, sponsored by the meetings industry and the Thailand government. I was also able to meet with the Medical Ultrasound Society of Thailand (MUST) Executive Committee and the AFSUMB President, Dr Kittipong Vairojanavong, together with Dr Stan Barnett, who was also in Bangkok at that time with his wife, Shirley Barnett. Dr Stan Barnett is the Chair of the ASUM Asia Link Program, which has the support of Council. Work is in progress for a joint conference between ASUM and MUST in Bangkok for 2003.

Similarly, it has been agreed that ASUM will jointly host a meeting with the Medical Ultrasound Society of Singapore (MUSS) early 2004. Cooperation and joint conferences between ASUM and individual societies in the Asia Pacific region has the support of AFSUMB. There will be more reports on the Asia Link Program, including proceedings from the ASUM 2002 Asia Link session in a future issue of the Bulletin.

Members who wish to register their interest in attending the offshore ASUM-Asian Society conferences, meetings, workshops are encouraged to contact me at [carolinehong@asum.com.au](mailto:carolinehong@asum.com.au)

## ASUM BID TO HOST WFUMB 2009 IN SYDNEY

ASUM is excited and very positive about the preparations surrounding the final bid to host the WFUMB 2009 Congress in Sydney. Council has given approval for the President, Immediate Past President, Treasurer and the CEO to travel to Montreal, Canada in May 2003 for the final bid process and to host the ASUM booth at the WFUMB 2003 Congress. ASUM has excellent capabilities in hosting a world class congress and Sydney is the perfect destination and venue of choice for WFUMB 2009.

Any member who is registering and attending the WFUMB 2003 Congress in Montreal, is invited to contact me on [carolinehong@asum.com.au](mailto:carolinehong@asum.com.au) so that we can have a list of Australian attendees for this meeting.

**Dr Caroline Hong**  
**Chief Executive Officer**  
**Email: [carolinehong@asum.com.au](mailto:carolinehong@asum.com.au)**

# Predicting operative delivery

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## ABSTRACT

### Objective

Unplanned operative delivery is associated with maternal anxiety, maternal and neonatal morbidity and increased resource use. The authors intended to identify potential predictors for emergency operative delivery.

### Study design

A prospective observational study was conducted on 173 nulliparous women in a tertiary antenatal unit. Translabial ultrasound was used to quantify cervical length, head engagement and anterior vaginal wall descent. Clinical data were obtained from antenatal records.

### Results

In the mid to late third trimester, maternal age ( $p=0.044$ ), cervical length ( $p=0.024$ ), anterior vaginal wall descent ( $p=0.005$ ) and head engagement on ultrasound ( $p=0.001$ ), were significantly associated with delivery mode. In a subgroup of 58 women seen at or after 36+0 weeks, only head engagement ( $p=0.003$ ) remained significant. Palpation of head engagement did not approach significance.

### Conclusions

Head engagement determined by translabial ultrasound is a strong predictor of delivery mode. Early identification of women at increased risk of operative delivery appears feasible.

## INTRODUCTION

One of the greatest challenges in modern Obstetrics may well be the fact that a large number of primigravid women in the developed world expect a normal vaginal delivery without obstetric intervention and end up with a highly medicalized birth, resulting in a perception of personal failure or suboptimal care<sup>1</sup>. In addition, some of those women

are left with long-term morbidity due to pelvic floor trauma. Unplanned emergency delivery may have major sequelae and significantly affect the future life of the woman and her child, even if somatic trauma does not occur<sup>1-3</sup>.

There is increasing demand for elective Caesarean Section, motivated by a desire to avoid traumatic childbirth and future pelvic floor morbidity<sup>4-6</sup>. However, it is currently impossible to identify those women most at risk of those negative outcomes. Previous attempts in this direction using clinically or ultrasonographically predicted birthweight have been discouraging<sup>7,8</sup>.

This study attempts to define potential predictors of emergency operative delivery in nulliparous women.

## METHODS

In order to test a number of potentially predictive factors for delivery mode, the authors undertook a prospective study in 173 nulliparous women originally recruited for a study of pelvic floor function in pregnancy and puerperium. They were seen at 32 - 38 weeks for an interview and translabial ultrasound. Labor and delivery data were collected via the institutional obstetric database and datasheets attached to the patients' antenatal records and filled in by the attending midwife in the labor ward. No personnel involved in labor ward management were aware of data obtained by the study.

The following parameters were used as potential predictors of normal vaginal delivery:

- Age at delivery
- Body Mass Index at first visit
- Weight gain in pregnancy
- Manual assessment of head engagement at nearest antenatal visit
- Cervical length as measured by translabial ultrasound

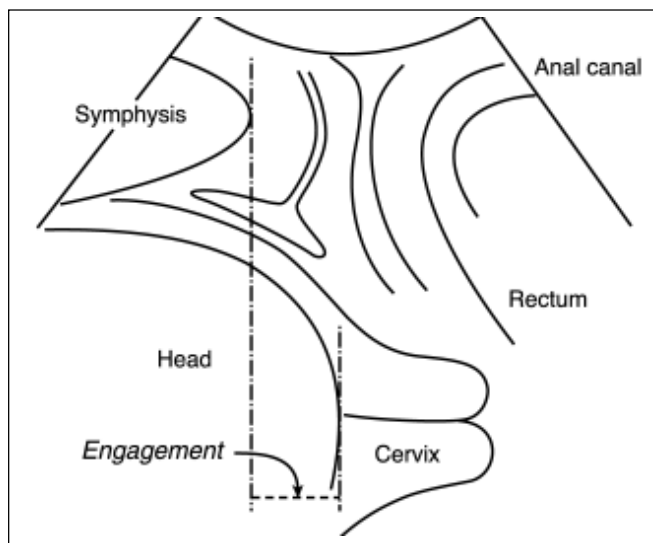


Figure 1 Translabial ultrasound at 37 weeks showing a well-engaged fetal head (left) and schematic drawing (right).

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**GE Medical Systems Adv  
(repeat of last issue page 5)**

## Predicting operative delivery

- Anterior vaginal wall relaxation (bladder position on Valsalva) as measured by translabial ultrasound
- Position of the fetal head at rest (= engagement) relative to the inferior margin of the symphysis pubis as measured by translabial ultrasound

Omitted were three parameters associated with Caesarean delivery that are unavailable at the time of a potential predictive assessment: birthweight, gestational age at delivery, and induction of labour. Since all three are only available either postpartum or shortly before delivery, they are useless as a potential antenatal predictive assessment in the late third trimester. Another potential predictor, the Bishop score<sup>9</sup>, was not tested as its invasive nature would likely have reduced recruitment and return rates.

Anterior vaginal wall relaxation was determined as previously described<sup>10</sup>. Descent of the posterior bladder wall is observed on maximal Valsalva and quantified by measuring the position of the most inferior extension of the bladder relative to the inferior symphyseal margin. All ultrasound parameters were obtained with the patient supine and after bladder emptying. Cervical length can be measured translabially<sup>11</sup>, although transvaginal assessment is thought to be more accurate<sup>12</sup>. Ultrasound engagement of the fetal head is determined at rest, with a vertical line through the posterior border of the symphysis pubis used as the reference. The inferior border of the symphysis pubis should be parallel to the transducer surface in order to enhance reproducibility. The maximum extent to which the presenting part has passed beyond this line is taken as the numerical value for "engagement". Figure 1 shows an ultrasound image of a 37 week cephalic pregnancy on the left and a line drawing illustrating the concept of ultrasound determination of engagement on the right.

Assessment of engagement on translabial ultrasound is a novel technique for which no interobserver variability is currently available. The authors are currently attempting to obtain such data.

Data analysis was carried out using Minitab™ v 13 on a PC and SPSS™ on a mainframe computer. The sample size had been determined by power calculations performed for the main study of pelvic floor function in pregnancy and puerperium which will be reported elsewhere. Kolmogorov-Smirnov testing was used to confirm normal distribution which was shown for all tested parameters. We used Pearson's correlations, simple and binary logistic regression models and t-test statistics to test for statistical significance. A  $p < 0.05$  was taken as indicative of significance. Ethics Committee approval had been obtained from the local Ethics Committee (South Eastern Sydney Area Health Service Ethics Committee approval 99/184).

## RESULTS

Delivery information was available on all 173 patients who had attended their 32-38 week appointment. In 6 women there were indications for Caesarean Section at the time of assessment (breech,  $n=5$ , and placenta praevia,  $n=1$ ). These patients were omitted from further analysis, leaving 167 datasets for evaluation. In 4 cases the cervical length measurement was unavailable due to technical difficulties,

omission or missing documentation. In 12 cases, ultrasound data for head engagement was unavailable due to low quality images or omission.

Table 1 shows the tested parameters that demonstrated significant or near-significant associations with normal vaginal delivery on univariate analysis. Neither Body Mass Index, weight gain nor manual palpation of the fetal head was significantly associated with normal vaginal delivery. Head engagement and anterior vaginal wall laxity (maximal bladder descent) were the strongest predictors.

**Table 1 Potential predictors of Normal Vaginal Delivery at 32- 39 weeks (SD in parentheses); only significant or near-significant associations shown.**

Parameter	NVD	no NVD	p=
Maternal age (n= 167)	28.7 (4.4)	30.2 (5.1)	0.044
Cervical length (n= 169)	27.4 (7.7) mm	30.2 (7.8) mm	0.024
Bladder position above symphysis (Valsalva, n= 166)	4.8 (10.9) mm	9.9 (11.9) mm	0.005
Head engagement on ultrasound (n= 155)	19.4 (15) mm	11.9 (13) mm	0.001

This analysis was repeated after exclusion of all assessments conducted before 36+0 weeks which left 58 datasets. Table 2 shows all tested parameters demonstrating a significant or near- significant association with delivery mode. Head position as assessed on translabial ultrasound again proved the strongest predictor. Manual palpation of the fetal head, maternal age and bladder descent on Valsalva did not show significant or near-significant associations.

**Table 2 Potential predictors for Normal Vaginal Delivery at 36-38 weeks' gestation (SD in parentheses); only significant or near-significant predictors shown.**

Parameter	NVD	no NVD	p=
Body Mass Index (n= 58)	23.1 (3.5)	25.1 (4.3)	0.067
Weight gain in pregnancy(n= 63)	13.2 (4.2) kg	11.0 (4.6) kg	0.07
Cervical length (n= 63)	26.7 (8.2) mm	30.7 (7.5) mm	0.061
Head engagement on ultrasound (n= 58)	18.9 (15.5) mm	8 (10.2) mm	0.003

Using the four significant or near-significant predictors, a binary logistic regression was performed for this second group. Only weight gain in pregnancy and head engagement on ultrasound remained independently significant (see table 3).

**Table 3 Binary logistic regression after removal of all nonsignificant factors. Only weight gain in pregnancy and head engagement on ultrasound remained significant. Odds ratios (OR) for normal vaginal delivery and confidence intervals (CI) given.**

Parameter	p	OR	CI
weight gain (kg)	0.038	1.18	1.01 - 1.39
head engagement on US (mm)	0.004	1.08	1.03 - 1.14

The strongest predictor, head engagement, was used to predict normal vaginal delivery or operative delivery. Figure 2 shows a receiver operator curve for this parameter. On choosing an optimal cutoff for predicting operative delivery, 9/12 women with engagement of 3 mm or less were delivered operatively (PPV 75%, NPV 67%). An optimal cutoff for predicting normal vaginal delivery (20 mm of engagement) saw 14/16 women in this group deliver normally (PPV 87.5%, NPV 54%).

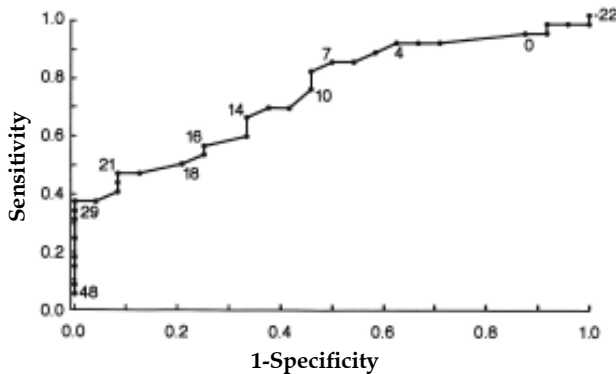


Figure 2 Receiver operator curve for head engagement on translabial ultrasound as a test for normal vaginal delivery.

Figure 3 shows a fitted line plot for the likelihood of normal vaginal delivery.

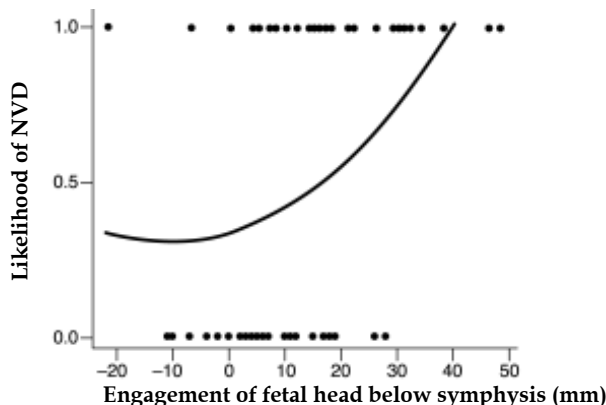


Figure 3 Fitted Line plot of likelihood of NVD versus position of the fetal head. Every dot along the upper and lower margins of the graph represents a delivery (normal above, operative below).

## DISCUSSION

Obstetric intervention in labour such as vacuum or forceps delivery or emergency Caesarean Section is associated with a significant increase in maternal and neonatal morbidity<sup>6</sup>. Identification of antenatal risk factors for such intervention may help reduce somatic and psychological trauma as well as the cost of service delivery, especially in primiparous women.

The high head at term in primigravid women has frequently been used to justify elective Caesarean Section<sup>13</sup> although head engagement has not been quantified by modern imaging methods to date. Advanced maternal age is a well-known risk factor for intervention in labour<sup>14,15</sup>. Other potential predictors include cervical length<sup>16</sup> and Body Mass Index. In this study we tested potential clinical predictors

(such as maternal age at delivery, maternal Body Mass Index, weight gain in pregnancy and palpation of head engagement in antenatal clinic) and ultrasound parameters of potential predictive value (cervical length, anterior vaginal compartment mobility on Valsalva and position of the fetal head). A newly developed parameter, engagement of the fetal head as determined on translabial ultrasound, proved by far the strongest of those potential predictors, and this measurement was much more strongly associated with delivery mode than manual determination of head engagement in antenatal clinic.

This study has demonstrated that it may well be feasible to define a group of women at high risk of operative delivery. Not surprisingly, this prediction seems more accurate closer to term.

As this study was conducted in the context of a larger investigation into the effects of vaginal childbirth on pelvic organ mobility, it is understood that the study design proved suboptimal for predicting operative delivery. Assessments should ideally be undertaken as close to 38 weeks as possible as this is the point in time when a decision regarding elective Caesarean Section would normally be considered by patient and obstetrician.

Another criticism of this study may be that indications for operative delivery were not differentiated, an issue that was deliberated at length. The following reasons prompted the authors to follow this course. On the one hand, reflecting clinical reality, a number of operative deliveries were performed for combined indications. On the other hand, reduced pelvic compliance may well increase the likelihood of both failure to progress and fetal compromise. Poor compliance is likely to result in higher intrauterine pressures, a risk factor for fetal distress<sup>17</sup>.

It remains to be proven as to whether any of the tested predictors of operative delivery, alone or in combination with others, can in fact contribute to clinical decision making. A search for such predictors or risk factors seems imperative in the light of a continuing trend towards elective Caesarean Section<sup>6</sup>. Prediction of delivery mode may eventually become a means of avoiding elective Caesarean delivery in primigravid women, rather than promoting it.

A prospective study is planned to confirm the findings of this study in a population of primigravid women assessed close to 38 weeks' gestation. If findings are confirmatory, then the recently discussed concept of a 'term cephalic trial'<sup>6</sup> may become feasible in a selected group of nulliparous women at increased risk of unplanned operative delivery.

## ACKNOWLEDGEMENTS

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# ASUM Multidisciplinary Workshop

1st Annual Multidisciplinary Workshop, Sydney, Friday 21- Saturday 22 March 2003



## PROGRAM

### General

Convenors: Dr David Rogers and Mrs Jane Fonda

### Obstetrics & Gynaecology

Convenors: Dr Glenn McNally and Dr Siobhan Lee

### In Vitro Fertilisation

Convenors: Dr Simon Meagher and Dr Shawn Choong

### Vascular

Convenor: Mrs Jeni Kidd

### Interventional

Convenor: Dr Matthew Andrews

### Cardiac

Convenor: Dr Raja Puranik

### Breast

Convenor: Ms Louise Smalley

### Paediatric

Convenor: Ms Amanda Crow

### FMF accredited First Trimester Screening Course



For more information:

Phone: 02 9958 7655 Fax: 02 9958 8002 Email: [asum@asum.com.au](mailto:asum@asum.com.au)

# Ultrasound appearance and removal of Implanon® under ultrasound guidance - a pictorial essay

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Since the introduction of Implanon® (Organon) in Australia, approximately 114000 devices have been implanted. Implanon® is a contraceptive implant containing the progestogen, etonogestrel (68mg) providing contraception for up to 3 years. It is presented as a single-rod semi-rigid polymer base and is conveniently pre-loaded for insertion. The applicator needle is positioned subdermally and the cannula is withdrawn, leaving the implant rod in place. Implanon® is usually removed by appropriately trained clinicians using the 'pop out' technique, involving a +/- 2mm incision<sup>1</sup>. However, if the rod cannot be palpated, then removal without a wide skin incision is difficult. Location of the nonpalpable Implanon® rods by ultrasound and MRI have been described<sup>2,3</sup>. Ultrasound has been used to remove foreign bodies<sup>4,5</sup>. Ultrasound allows for real time monitoring of the needle and forceps position in relation to the Implanon® implant during the procedure. We present a pictorial essay using ultrasound for removal of the nonpalpable and difficult to remove Implanon®. Scans were performed using a ATL ultrasound machine (HDI 5000, Bothell, USA).

## TECHNICAL AND HELPFUL HINTS

- A high frequency transducer is an essential prerequisite
- Scanning along the longitudinal plane of the implant allows for easier localisation and visualisation of the grasping forceps in relation to the implant
- The Implant rods can be recognised as a linear echogenic structure with a posterior acoustic shadow cast by the Implanon®
- Administer adequate local anaesthesia
- Allow a sufficient skin incision to allow the grasping forceps to open / close
- A fibrous sheath surrounds the implant and adequate incision/dissection of the sheath is necessary to allow the forceps to grasp the implant
- A fine grasping forceps is used for retrieval
- The implant can be palpated with the forceps tip further confirming accurate localisation



Figure 1 Implanon® rod and inserting device. The implant is a 40mm x 2mm plastic rod containing 68mg etonogestrel.

## CONCLUSION

Ultrasound offers a safe and cheap means of localisation and allows real time imaging whilst removing the impalpable Implanon® implant.

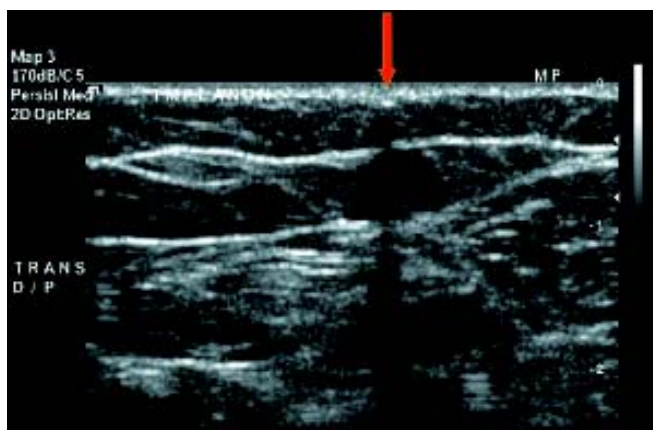


Figure 2a Correctly inserted subcutaneous rod (transverse). The device is inserted subcutaneously into the groove between the biceps and triceps in the nondominant arm.

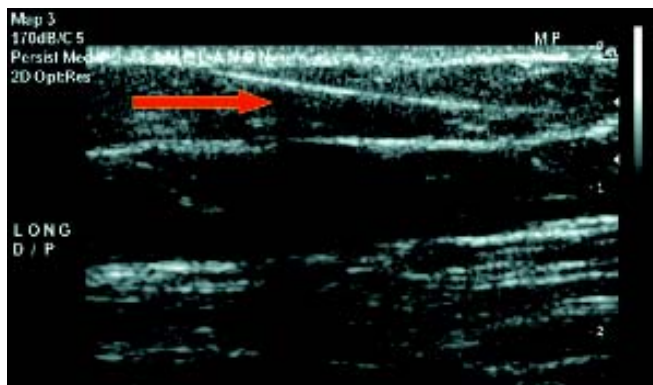


Figure 2b Subcutaneous rod (longitudinal)

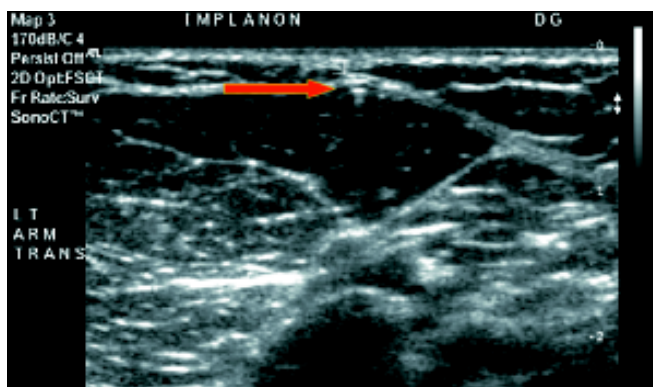


Figure 3a Subfascial insertion (transverse)



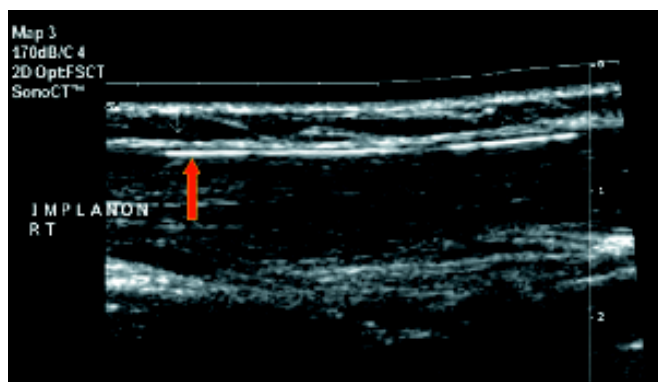


Figure 3b Subfascial insertion (longitudinal)



Figure 4a Intramuscular insertion (transverse)

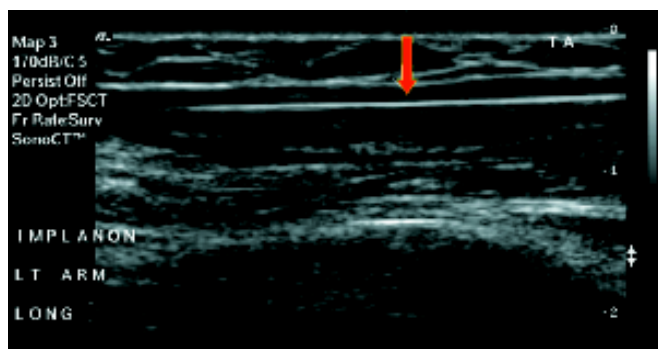


Figure 4b Intramuscular insertion (longitudinal)

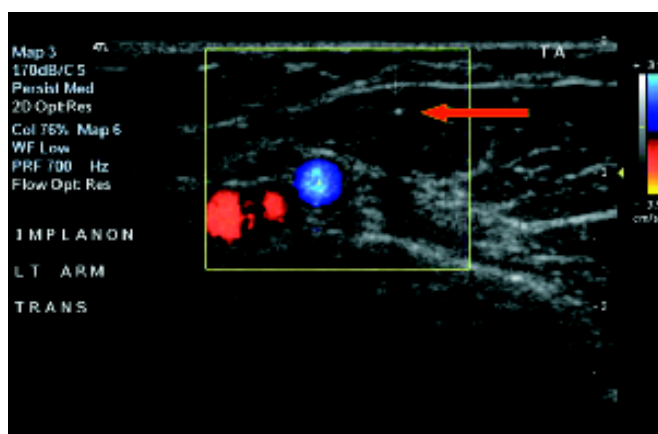


Figure 5 Using color doppler the adjacent vessels can be identified prior to removal.



Figure 6a Insertion of local anaesthetic at site approximately 5mm from tip of rod (marked on skin)

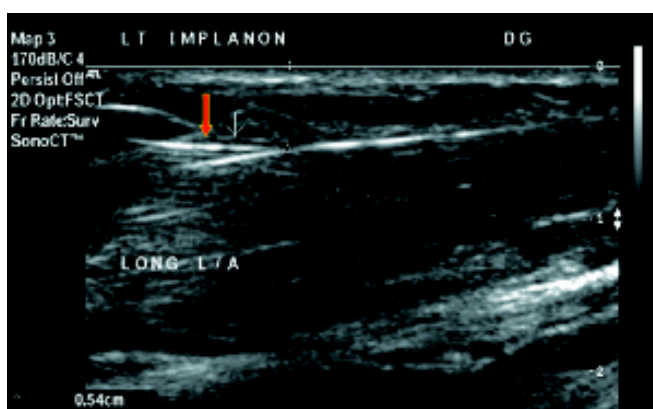


Figure 6b Ultrasound of local 23g needle to confirm path to rod.



Figure 7a Skin incision and entry of forceps toward implant. The rod may be palpable with the forcep tip.

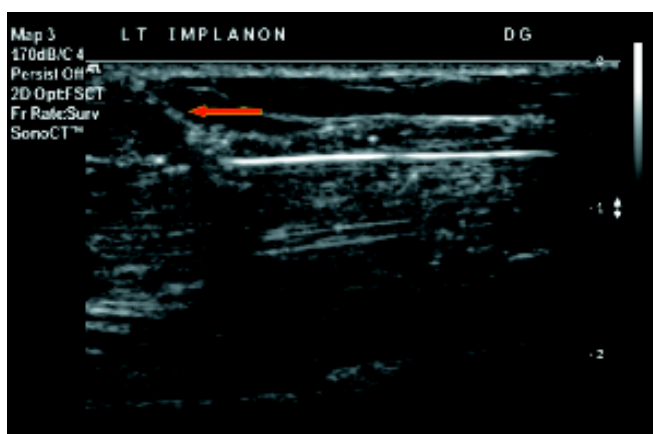


Figure 7b Ultrasound of rod and forceps

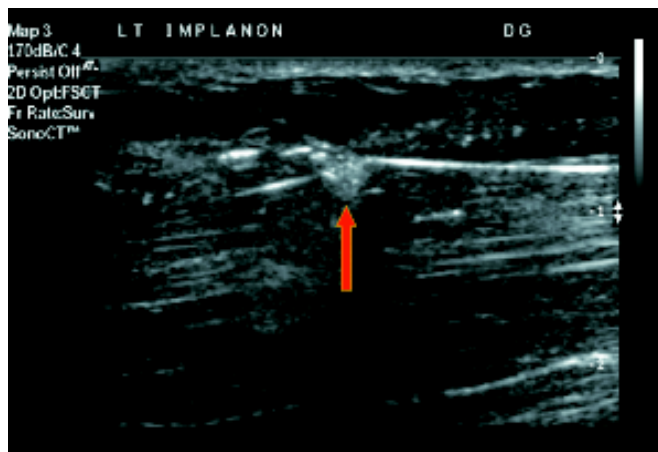


Figure 7c Grasping the implant. This may be difficult due to the fibrous sheath that envelops it after insertion.



Figure 8a The implant at the surface prior to excision of the sheath.



Figure 8b The implant ready to withdraw



Figure 9 The end result

### References

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# Panoramic ultrasound - a wider field of view

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## INTRODUCTION

"Panoramic" ultrasound is a feature of the ATL (HDI 5000, Bothell, USA). and has been increasingly utilised in our department since its installation six months ago.

It is an imaging process that produces a panoramic image using conventional scanheads and provides both qualitative and quantitative information. Panoramic imaging broadens the scope of spatial relationships, thereby sequentially aligning individual images in their anatomical context. Panoramic imaging has the ability to display an entire abnormality and show its relationship to adjacent structures on a single static image.

In the short time that it has been utilised in our department, its usefulness is clearly apparent and is now used routinely in a wide variety of applications. We present a pictorial essay of a number of case studies demonstrating the applications of panoramic ultrasound.

## METHOD

To produce a panoramic image a sufficient amount of scanning gel must be applied to the entire area of interest thus preventing any drag which will inadvertently produce artifacts on your image. A practice sweep is always performed initially to determine the scanning path. When

producing a panoramic image, the scanhead needs to be moved smoothly and in a precise direction. If the object scanned is off plane or off the desired path, forward motion is discontinued and orientation can be corrected. Image registration stops if the scanhead is stationary. Once the area of interest has been scanned, the panoramic image is saved and is viewed on the monitor. Measurements can be performed at this stage.

## PITFALLS AND ARTIFACTS

Distortion of the panoramic image can occur and the most frequent causes are as follows:

- Insufficient gel - this causes the scanhead to drag.
- Moving too quickly or twisting the scanhead - this can result in seams or 'tearing' within the image and also overlapping of the image.
- When using a linear scanhead, ensure the entire scanhead face is in contact with the surface and also perpendicular to the skin line, otherwise blurring and loss of proper curvature in the image will occur.
- On highly curved surfaces blurring of the image can occur.
- Ensure even pressure is applied, otherwise the tissues can be deformed which leads to artifacts and measurement errors.

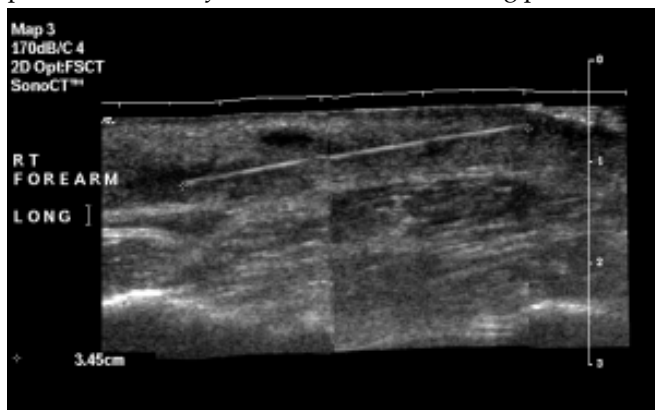


Figure 1 Grapevine Splinter - note scanning artifact due to twisting of scanhead



Figure 2 Achilles spur - note loss of contact due to insufficient gel



Figure 3 Normal testes allowing comparison of echotexture



Figure 4 Demonstration of native vein and artery and graft (colour not available)



Figure 5 Normal breast parenchyma



Figure 8 Tear and hematoma of the gastrochemius muscle

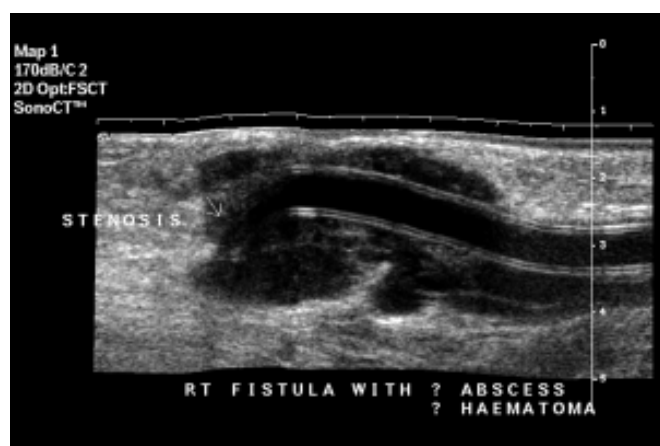


Figure 6 Collection around anastomosis of a dialysis fistula

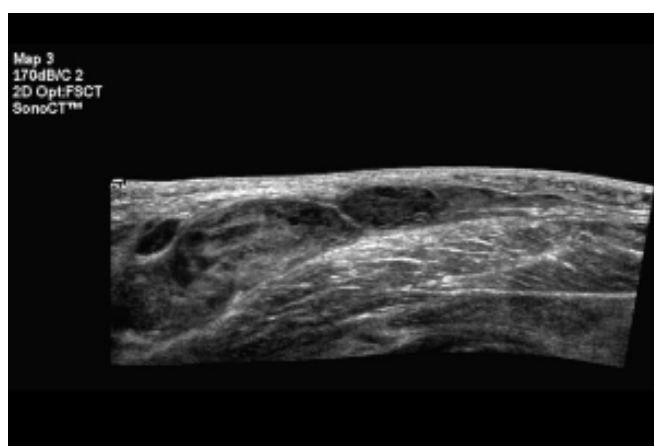


Figure 9 Rectus sheath hematoma

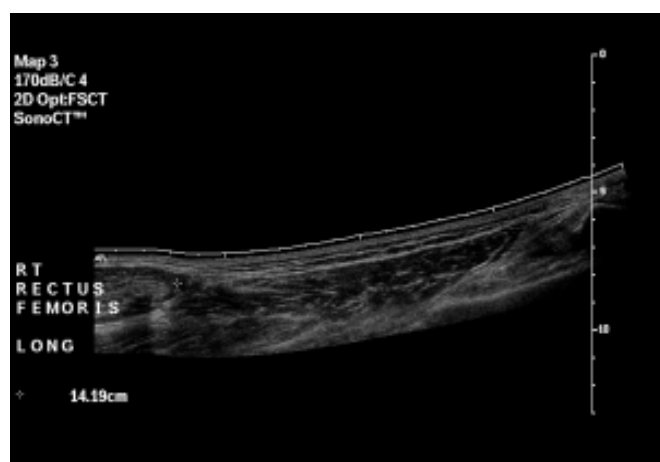


Figure 7 Tear of rectus femoris muscle illustrating the separation of the retracted muscle and insertion

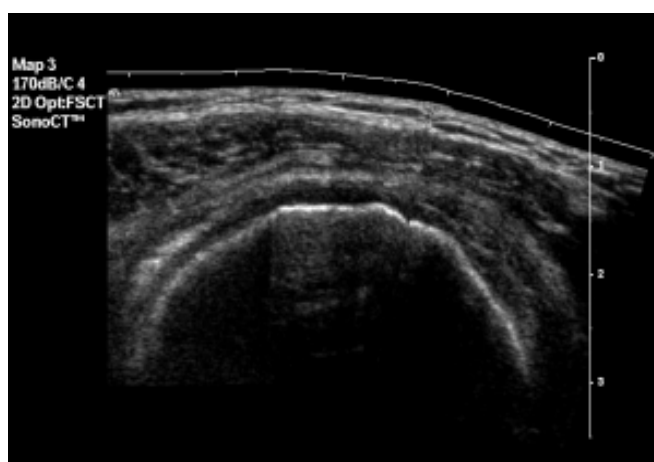


Figure 10 Complete tear of the supraspinatus





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# Crown Rump Length Measurements: for accurate dating

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## BACKGROUND TO THE STUDY

ASUM policy on early pregnancy states that the earliest measurement of gestational age taken in pregnancy should usually be accepted as the definitive assessment, with subsequent examinations reflecting only fetal growth in the intervening period.

The original definition of a crown rump length (CRL) was by Mall in 1907. The CRL is the sitting height, mid brain to the lowest point of breech. For ultrasound the CRL was defined as the longest length excluding the limbs & yolk sac. Benson & Doublet claimed that in the first trimester "the sonographic estimation of gestational age will be within 0.5wks of the actual age in 95% of cases."

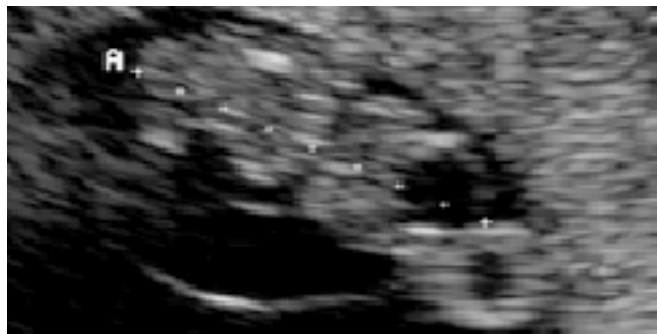
How often has a patient arrived for an eighteen week morphology scan, based on ultrasonic dating in the first trimester, to find the dates are actually a week or more out? The majority of errors appear to occur with CRL measurements taken from 11 weeks onwards.

## AIM

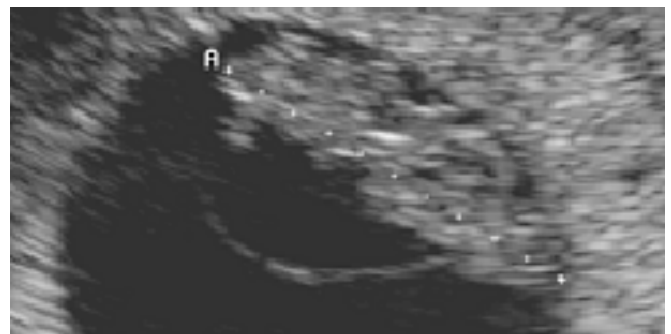
- To assess the variability in the CRL measurement of a fetus during an ultrasound examination.

## GESTATION < 9WEEKS

Common mistakes are including the yolk sac in the measurements and ill-defined end points.



CRL 17mm = 8wks (over-measured due to parallax error)



CRL 22mm = 8w 5d

## 11 – 12 WEEK VARIATIONS OF CRL DUE TO FETAL FLEXION



CRL 54mm = 11w4d



CRL 62mm = 12w4d

- To determine the stage at which most measuring variables occur – thereby giving an inaccurate estimated date of delivery.
- To determine the best combination of fetal parameter measurements for the most accurate dating.

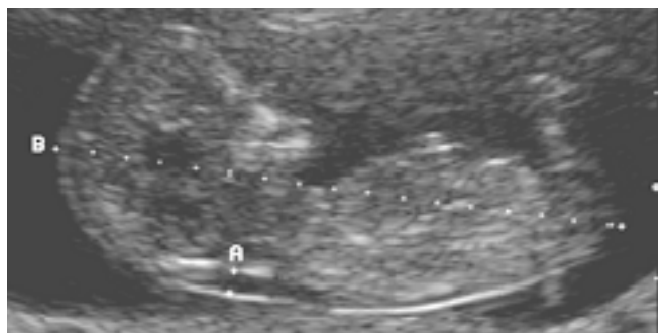


Correct CRL measuring plane.

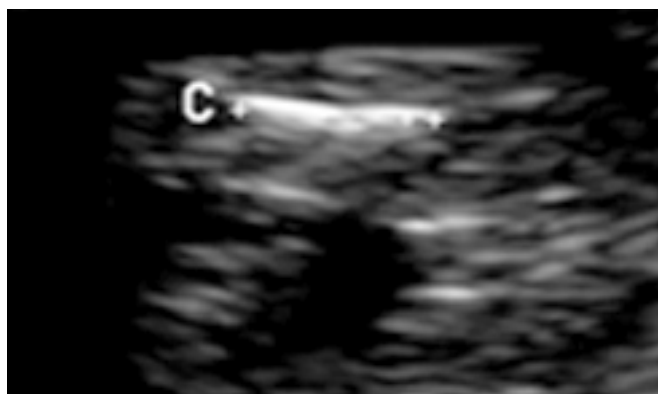
## METHODOLOGY

- 215 pregnancies up to 14 weeks gestation by last menstrual period (LMP) (noted cycle lengths) / early scans.
- Transabdominal scan, followed by transvaginal scan if indicated.
- If dates by CRL > 11 weeks then measure biparietal diameter (BPD), head circumference (HC) and abdominal circumference (AC), femur and humerus lengths.
- Measure between the fetal poles – cephalic edge to rump and assess degree of fetal flexion / extension.
- Minimum of 3 CRL measurements required on each fetus.
- Statistics used predictive value based on LMP / early scan.

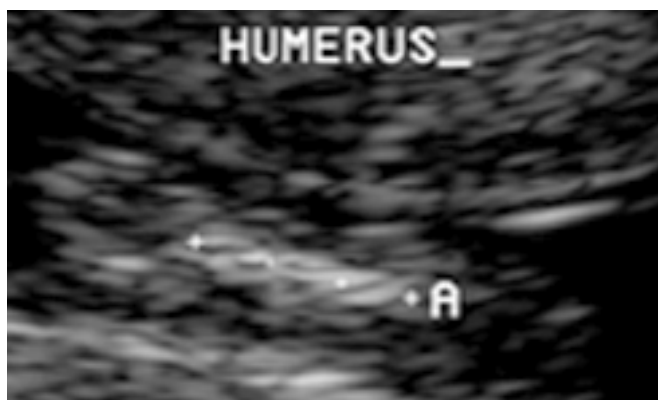
## 12 WEEK TRANSVAGINAL SCAN



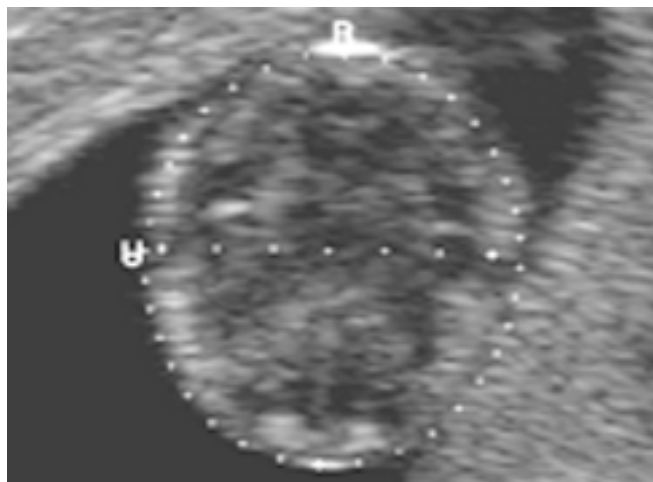
CRL 61mm - 12w 3d



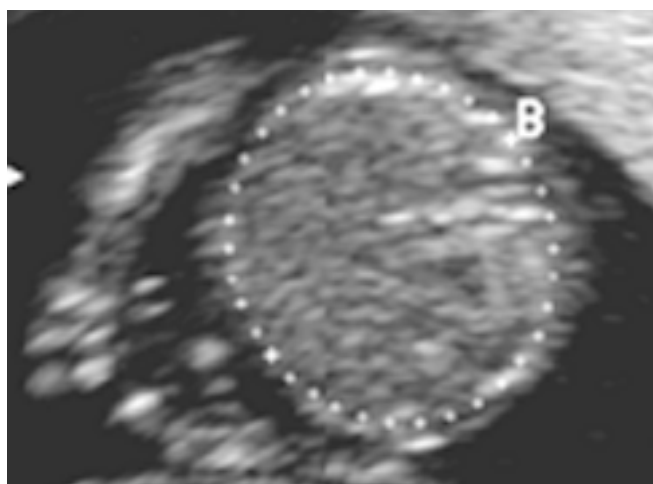
Femur 63mm - 12wks



Humerus 9mm - 12wks

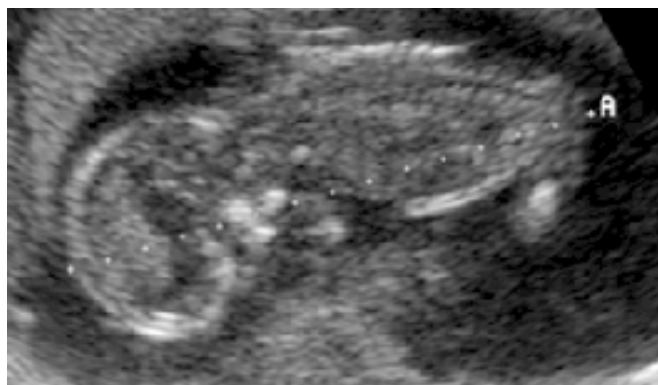


BPD 23mm 12w 6d, HC 80mm - 12w5d



AC 71mm - 12w 5d

## 13 TO 14 WEEKS – SPINE CURVATURE AND LIE



CRL 74mm = 13w 3d.



Same fetus CRL 85mm = 14w 2d.

## RESULTS

At < 11 weeks the CRL predictive value is +/- 3 days. This value increased with age to be equal to the BPD, HC & AC (+/- 6 days) from 12 weeks 4 days.

At < 13 weeks the CRL had a higher correlation with gestational age.  $r = .986$ ,  $p < 0.001$

No significant difference was seen between the transabdominal and transvaginal CRL measurements.

Transvaginal images for HC and AC were significantly more precise than transabdominal views. ( $p < 0.05$ ).

Long bones showed the least correlation prior to 13 weeks.  $r = 0.82$ ,  $p < 0.01$ .

## CONCLUSION

This study finds that CRL measuring discrepancies are more prevalent from 12 weeks gestation.

The CRL was the measurement of choice < 12 weeks gestation. From 12 weeks gestation the CRL should be used in conjunction with BPD, HC and AC.

Long bone measurement accuracy was best from 13 weeks gestation.

The most precise results were obtained when the fetus was in the neutral position.

Discard any measurement that differs from at least 2 other parameters by more than a week.

## References

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# A' as a measure of atrial function in left ventricular hypertrophy and left ventricular dysfunction

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## ABSTRACT

*Atrial function is clinically relevant as it contributes up to a third of cardiac output, especially in diseased states of the ventricle. We hypothesized that the velocity of mitral annulus ascent secondary to atrial contraction (A') measured using Doppler tissue imaging (DTI) would provide a novel echocardiographic parameter of atrial function.*

*We studied 170 patients in sinus rhythm without significant valvular abnormalities with 2D echocardiography. 92 had normal left ventricular (LV) function (Group 1), 42 had left ventricular hypertrophy (Group 2) and 36 had left ventricular dysfunction (Group 3). A' was measured by DTI in the apical 4 chamber view as the peak velocity of mitral annular ascent with atrial contraction in late diastole. Traditional echocardiographic parameters of atrial function including: mitral inflow peak A wave velocity, A wave velocity time integral (VTI) and atrial fraction ([A wave VTI/ Total mitral inflow VTI] X 100%), were also measured in all patients.*

## Results

*A' velocity was significantly higher in Group 1 than in Groups 2 and 3 ( $9.1 \pm 1.8$  vs  $8.6 \pm 2.7$  vs  $6.4 \pm 2.2$  cm/sec,  $p=0.001$ ). In Group 1, A' velocity did not correlate with mitral inflow A wave velocity or atrial fraction. In Group 2/3, A' velocity significantly correlated with mitral inflow A wave velocity ( $r=0.4$ ,  $p=0.0014$ ) and atrial fraction ( $r=0.32$ ,  $p=0.0045$ ).*

## Conclusion

*The velocity of ascent of mitral annulus with atrial contraction was significantly decreased in LV hypertrophy and LV dysfunction which may cause a decrease in ventricular compliance resulting in atrial dysfunction. In this group, the A' was noted to correlate with other markers of atrial function. The reliability and sensitivity of this parameter requires assessment in a range of disease states to further elucidate its utility.*

## PURPOSE

Atrial fibrillation (AF) is the most common arrhythmia especially in the aging population. AF is associated with atrial dysfunction. Loss of atrial function can cause heart failure as atrial contraction augments ventricular filling and contributes to approximately 30% of cardiac output. Accurate estimation of atrial function has therefore become clinically relevant. There is however no accepted gold standard for evaluation of atrial function. Doppler Tissue Imaging (DTI) is a newly emerging technique which quantifies longitudinal contraction in cardiac muscle. We sought to study mitral annular ascent secondary to atrial contraction (A' velocity) as an indicator of atrial function.

## BACKGROUND

Atrial fibrillation (AF) is the commonest arrhythmia with an increasing incidence with age (~10% in individuals >

65years). Several new treatments are being developed for AF and thus accurate estimation of atrial function is relevant for assessing progress. Several echocardiographic parameters have been proposed for the evaluation of atrial function but these have not been validated. These include the velocity and time integral of the "A" wave of the transmitral flow patterns from Doppler echocardiography that corresponds to active atrial contraction. The "atrial fraction" (A wave velocity time integral (VTI)/ total VTI), has also been studied previously as an indicator of atrial function. However these parameters are influenced by the left ventricular end diastolic pressure (LVEDP) and LV compliance and thus atrial mechanical function may be underestimated.

DTI is a recently developed technique for estimation of longitudinal contraction in the heart and to quantify regional myocardial velocities. DTI of the mitral annulus shows mitral annular ascent in early diastole (E') which corresponds to early LV diastolic filling and in late diastole (A') which corresponds to atrial contraction.

We hypothesised that mitral annular ascent corresponding to atrial contraction would provide a novel echocardiographic parameter of atrial function. We proposed to study this in normal subjects and in those with LV dysfunction or hypertrophy and hypothesized that the velocity would be decreased in diseased states.

## METHODS

### Study Patients

- 170 patients presenting for routine transthoracic echocardiograms were enrolled and studied prospectively
- Age Group: 17 - 86 yrs
- Gender: 82 males, 88 females

### Groups Analysed

- Group 1: Normals (n= 92)
- Group 2: LV Hypertrophy (n=42)
- Group 3: LV Dysfunction (n=36)

### Inclusion Criteria

- 1) Sinus rhythm with a heart rate (HR) <110 bpm
- 2) Mild or mild-to-moderate mitral regurgitation (MR)
- 3) Mild mitral stenosis (MS), aortic stenosis (AS) or aortic regurgitation (AR)
- 4) Concurrent TR regardless of severity

### EXCLUSION CRITERIA

- 1) Atrial fibrillation or sinus tachycardia with a HR >110bpm
- 2) Moderate or severe AR or MR
- 3) Moderate or severe mitral or aortic stenosis
- 4) Previous mitral / aortic valve repair / replacement
- 5) Congenital heart disease

- $A'$  was measured in all patients in the apical 4 chamber view as the peak velocity of mitral annular ascent with atrial contraction in late diastole. Sample volume (4 mm in size) was placed on the atrial side of the septal mitral annulus
- Transmitral inflow peak "A" wave velocity by pulsed wave Doppler sampling at the tips of the mitral leaflets was measured in all patients
- VTI of the "A" wave was measured in all patients.
- "Atrial Fraction" which is calculated as the  $[(A \text{ wave VTI} / \text{Total Inflow VTI}) \times 100]$  was calculated in all patients using CW Doppler sampling at the level of the mitral annulus.

## REFERENCE STANDARDS

- 1) Peak "A" wave velocity
- 2) A wave velocity time integral
- 3) Atrial fraction

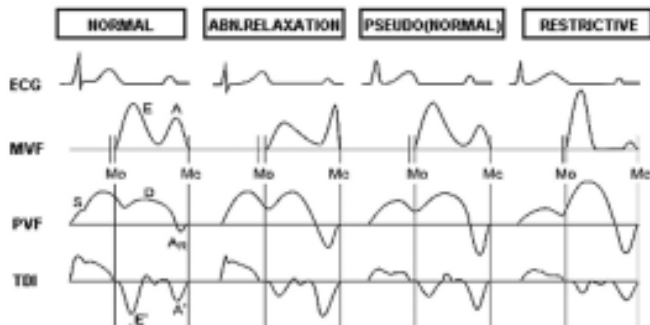


Figure 1 PW Doppler of mitral valve flow (MVF), pulmonary vein flow (PVF) and mitral annular motion (TDI)

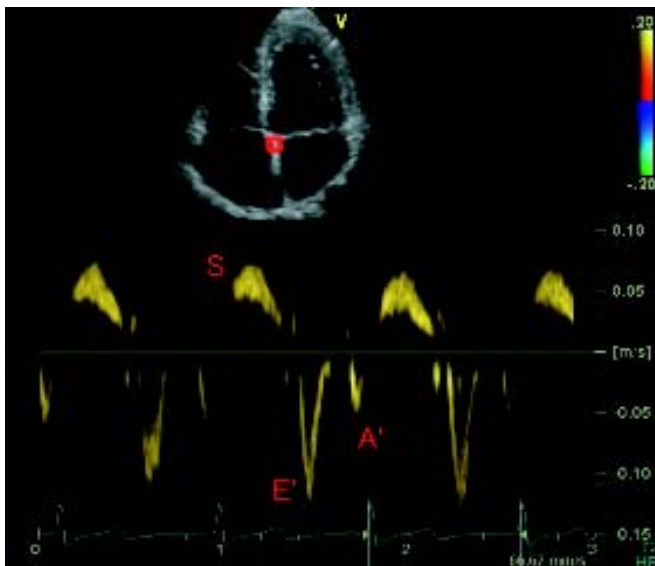


Figure 2 DTI of mitral annular motion showing S, E', A'

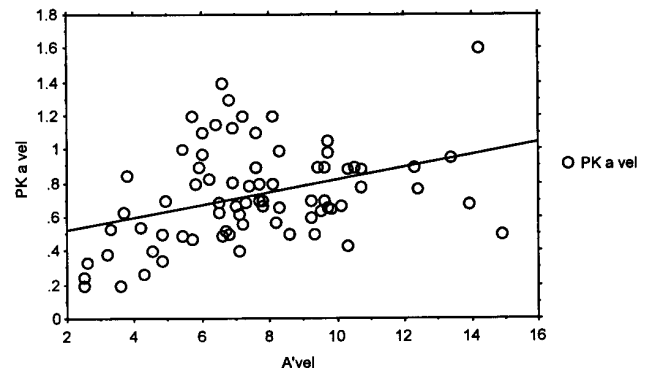
## EQUIPMENT

Routinely used commercially available instruments:

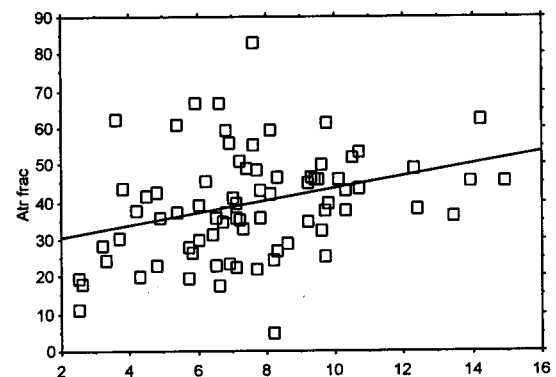
- General Electric / Vingmed System 5 with a 3.5 MHz variable frequency phased array transducer using Doppler Tissue Imaging.

## RESULTS

- 1) Group 1 had a significantly higher  $A'$  velocity as compared to Group 2 and Group 3 ( $9.1 \pm 1.8$  cm/sec vs  $8.6 \pm 2.7$  cm/sec vs  $6.4 \pm 2.2$  cm/sec).
- 2) In Group 1 the  $A'$  velocity did not correlate with mitral inflow A wave velocity or atrial fraction.
- 3) In Group 2 and 3,  $A'$  velocity correlated with the peak A wave velocity ( $r = 0.4$ ,  $p = 0.0014$ ) and atrial fraction ( $r = 0.32$ ,  $p = 0.0045$ ).



A' velocity vs peak A velocity



A' velocity vs Atrial fraction

- 4) Multiple pairwise comparison using analysis of variance demonstrated significant difference between Group 1 vs Group 3 ( $p = 0.001$ ) and Group 2 vs Group 3 ( $p = 0.001$ ). There was no significant difference between Groups 1 and 2 ( $p = 0.160$ ). Similar findings were noted with peak A velocity
- 5) No significant differences were present between groups for the A wave VTI or atrial fraction.

## CONCLUSIONS

We have proposed and prospectively validated that mitral annular ascent secondary to atrial contraction measured by DTI could be a useful measure of atrial function. Diseased states of the LV (LV hypertrophy and dysfunction) may decrease atrial compliance resulting in a decrease in  $A'$  velocity. In groups 2 and 3,  $A'$  correlated with other markers of atrial function. The reliability and sensitivity of this parameter requires assessment in a range of diseased states to further elucidate its utility.

# Localised Langerhan's cell histiocytosis (eosinophilic granuloma) of the skull: a case report

Lorna Hardiman GradDipHealthSc (Medical Sonography), Sydney Paediatric Radiology, Westmead

## CLINICAL HISTORY

A 4-year-old female presented with a soft tissue scalp mass situated in the left parietal region of the skull. The lump had been discovered incidentally whilst the mother was washing the child's hair. On physical examination the mass was soft, palpable and non-tender. A soft tissue ultrasound and skull x-ray were requested.

## TECHNIQUE

The lesion was examined using a high-resolution 10MHz and a 7MHz linear transducer with a soft tissue pre-set program. Colour Doppler and pulsed wave Doppler were used to fully evaluate the vascularity and flow patterns of the mass. Due to the superficial nature of the lesion, a standoff gel pad was used.

## ULTRASOUND FINDINGS

A well-circumscribed hypoechoic fusiform mass lesion measuring 2.4cm x 2.9cm with a maximal thickness of 0.9cm was seen lying deep to the subcutaneous fat. Extension of the lesion through a well-defined bony defect in the outer table of the skull was suggestive of bony erosion (Figures 1 and 2).

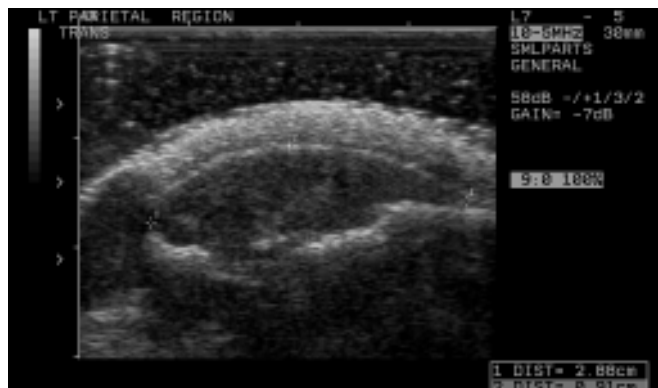


Figure 1 Transverse section shows a fusiform homogenous hypoechoic subperiosteal mass with erosion of the outer table of the skull.

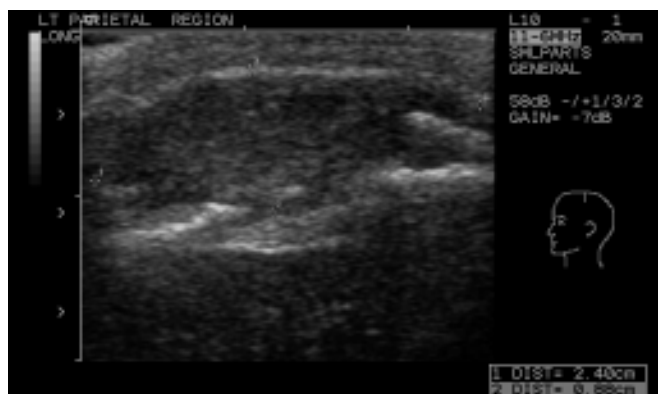


Figure 2 Longitudinal section shows the 'bevelled-edge' skull bone erosion

The lesion was not compressible. There were some vessels present within the mass with both arterial and venous flow signals (Figure 3). The RI of the lesion was 63%. These

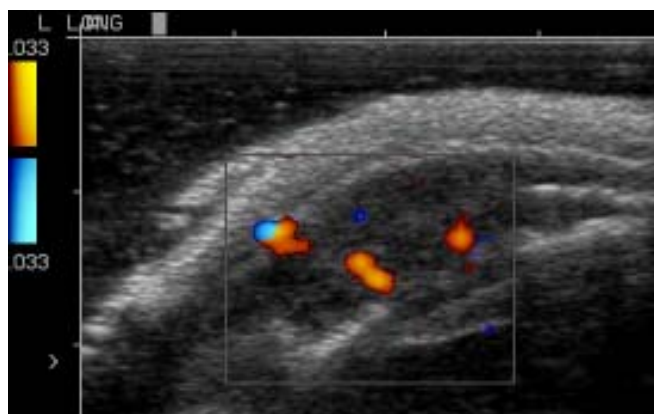


Figure 3 Scattered vascularity with colour Doppler

findings are suggestive of a Langerhan's Cell Histiocytosis (LCH). The differential diagnosis includes a metastatic lesion or lymphoma.

A skull x-ray was performed which showed a well-circumscribed osteolytic lesion in the left parietal bone corresponding to the palpable mass lesion. The radiological findings supported the sonographic diagnosis of LCH.

## FOLLOW UP

A radiological skeletal survey and bone scintigraphy demonstrated no other definite lesions.

A biopsy and frozen specimen confirmed Langerhan's cell histiocytosis.

Curettage of the lesion was performed as the wound became infected after the biopsy. An x-ray performed of the skull a year later showed healing of the osteolytic lesion.

## DISCUSSION

LCH, formerly known as Histiocytosis X, is a spectrum of disease characterised by an abnormal non-neoplastic proliferation of Langerhan cell histiocytes of unknown origin, presenting with localised or systemic manifestations<sup>1</sup>. The condition encompasses three main syndromes ranging from mild to acute, which may have some clinical overlap, and may evolve from one form to another: acute disseminated LCH (Letterer-Siwe disease); chronic recurrent form of disseminated LCH (Hand-Schüller-Christian disease) and the localised mainly osseous form of LCH (Eosinophilic granuloma)<sup>1</sup>. LCH is a rare disease with an incidence of 0.2-0.5 per 100,000 children per year in the United States, with boys more affected than girls<sup>2</sup>.

*cont'd on page 24*



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## Diploma in Medical Ultrasonography

The Diploma of Medical Ultrasonography is an internationally accepted qualification in medical ultrasound. Holders of the DMU are eligible for registration by the ASAR as Accredited Medical Sonographers.

The Diploma (DMU) is a post graduate qualification, for which candidates must direct their own study to the syllabus and reading lists. DMU applicants must hold a diploma or degree in medical imaging, nursing, midwifery, science, cardiopulmonary technology or medical technology. Medical degrees that are not registrable in Australia or New Zealand (or other educational backgrounds which are deemed by the Board to contribute to the modality) are also likely to satisfy entry requirements. The DMU examinations are conducted annually, in two parts, by the Board of Examiners. Candidates may be examined in General, Cardiac, Vascular or Obstetric Ultrasonography.

**DMU Part 1.** The Part 1 Examination comprises two papers covering the basic subjects required in ultrasonography. A pass in both papers is a requirement for the Part 1 examination. The Part 1 Examination consists of:

- a. Physical Principles of Ultrasound and Instrumentation - all specialties sit for this paper which examines candidates' knowledge of basic terminology, propagation of ultrasound in tissue, principles of imaging, transducer technology, electronic array technology, performance parameters, image artifacts, Doppler principles, artifacts, and instrumentation and bioeffects.
- b. Anatomy, Embryology, Physiology, General Pathology - examines candidates' knowledge in the selected specialty area of General, Cardiac, Obstetrics or Vascular.

**DMU Part 2.** Part 2 candidates must have documentation verifying their clinical experience and the recommended numbers of ultrasound examinations recorded. Candidates will be expected to attain competence in the performance and interpretation of diagnostic ultrasound examinations. In addition to a review of relevant Part 1 material, emphasis will be placed on the development of technical skills, image interpretation and patient care. The Part 2 Examination consists of:

- a. One written paper on ultrasound techniques, physical principles and instrumentation.
- b. Practical examination.
- c. Objective Structured Clinical Examination (OSCE)

The Diploma of Medical Ultrasonography is awarded by the Council of the Australasian Society for Ultrasound in Medicine (ASUM) after satisfying academic and practical criteria which emphasise achievement over a period of practical training and examination.

For further information download the DMU Handbook from the ASUM website: [www.asum.com.au](http://www.asum.com.au) or contact:

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# Gallstone in pelvis: a case report

Marilyn Zelesco AMS, Tutor Sonographer, Radiology Department, Royal Perth Hospital, Western Australia

## BACKGROUND

37 year old male with lower abdominal pain was referred to Royal Perth Hospital (RPH) following transfer by the Royal Flying Doctor Service (RFDS). The patient had initially presented with lower abdominal pain 2 months previously at a regional centre. An abdominal ultrasound diagnosed cholelithiasis.

A laparoscopic cholecystectomy was performed on July 5, which revealed the absence of gallstones.

On July 22, the patient was transferred to RPH by RFDS after developing acute right upper quadrant pain, lower abdominal pain and distension accompanied by chills and fever. Laboratory tests revealed raised ALP (1120), ALT (177) and Bilirubin (40). The patient was treated with IV

antibiotics and admitted for further investigations including a repeat abdominal ultrasound.

## ULTRASOUND FINDINGS

An abdominal ultrasound revealed the presence of multiple fluid collections within the abdomen consistent with possible bilomas. In the pelvis, immediately posterior to the bladder was a 1.5 cm echogenic focus consistent with a displaced gallbladder calculus. The images below are transverse and longitudinal images of the pelvis from this study.

## SURGICAL FINDINGS

At laparoscopy a leaking cystic duct was discovered and a stent inserted. The laparoscope included retrieval of the residual calculus. The stent was left *in situ* and the patient scheduled for review.



Figure 1 Longitudinal ultrasound image of pelvis demonstrating split calculus.



Figure 2 Transverse ultrasound image of pelvis demonstrating split calculus.

*cont'd from page 22*

Localised LCH of bone is the mildest form of histiocytosis presenting with single or multiple bone lesions and accounts for approximately 70% of cases with 90% of patients presenting between 5 and 15 years of age<sup>1</sup>. Clinical presentation includes local pain, soft tissue swelling and occasionally fever and elevated white cell counts. Solitary LCH may occur in any bone, with the skull being the most frequently involved<sup>3</sup>. The radiological findings of LCH of the skull include a round or ovoid lesion with nonsclerotic margins and appear 'punched out'. The uneven destruction of the outer and inner tables results in a bevelled-edge appearance<sup>1</sup>.

Whilst the majority of localised LCH lesions can be diagnosed with radiography, sonography is ideal to exclude other

causes of osteolytic skull lesions such as dermoid or epidermoid cysts. A review of the respective literature shows no documented ultrasonic findings of a localised LCH lesion of the skull.

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# Book review

**Title:** Pediatric Sonography 3<sup>rd</sup> Edition  
**Editor:** Marilyn J Siegel MD  
**Publisher:** Lippincott, Williams and Wilkins  
**Published:** 2002 ISBN 0 7817 2753 7  
**Approximate cost:** \$A457.50

It is with great pleasure that I review the 3<sup>rd</sup> edition of this excellent comprehensive textbook dedicated to Pediatric Ultrasound.

The first edition (1990) and second edition (1996) have become the standard textbooks in many pediatric radiology and pediatric ultrasound departments around the world.

This current edition continues to reflect the evolution of this subspecialty of sonography having almost doubled in size (720 pages) compared to the first edition (420 pages). The contributing authors to the chapters have changed to current experts in their field although Siegel remains the predominant contributor.

All chapters have been expanded, including not only how to do the examination, normal anatomy and variations on normal but also sonographic findings in disease processes and reviewing the current state of scientific opinions with regard to specific ultrasound findings in certain pathological processes.

The first 2 chapters cover physical principles, instrumentation and artifacts. The following 13 chapters are divided by body region including brain, face and neck, chest, liver, gallbladder and biliary tract, spleen and peritoneal cavity, GI tract, urinary tract, adrenal glands, pancreas and retroperitoneum, female/male pelvis, musculoskeletal and vascular and then spinal ultrasound. The final chapter is about pediatric ultrasound guided intervention.

The chest chapter now includes pediatric breast ultrasound and expected findings in certain disease processes including premature thelarche.

Intracranial Doppler is discussed in more depth including a table with normal arterial blood flow velocities in term infants.

The images are of high quality with numerous examples of disease processes and normality including 40 pages of colour plates with wonderful Doppler examples of haemangiomas, abscesses, malignant sacrococcygeal teratoma with the feeding vessels and intracranial sagittal sinus thrombosis to mention just a few.

Overall I believe the book has achieved its goal to provide a very up-to-date comprehensive textbook on the applications of pediatric ultrasound. It is very readable and extremely well illustrated. It should be the standard text in any ultrasound department performing pediatric studies and for anyone interested in pediatric sonography.

**Dr Lee Coleman**  
**Pediatric Radiologist**

**Title:** Acoustic Characterization of Contrast Agents for Medical Ultrasound Imaging  
**Author:** Lars Hoff, Department of Telecommunications, The Norwegian University of Science and Technology, Trondheim, Norway  
**Publisher:** Kluwer Academic Publishers  
**Published:** 2001 ISBN 1 4020 0144 4  
**Approximate Cost:** \$A168.95 (hard cover)

The book covers the theory of ultrasonic contrast agent bubble behaviour applicable to ultrasonic contrast imaging. The author is particularly well placed to write such a book. He worked for some time at Nycomed Imaging AS, a developer and manufacturer of ultrasonic contrast agents. He then worked at the Norwegian University of Science and Technology. This book is based on his Ph.D. thesis at the University. The author observed the lack of a good basic book on contrast agents during his earlier studies, and one of his aims was to fill this gap.

Although the book is a rigorous theoretical treatise, it is noteworthy in the clarity with which the author explains in lay terms the significance of the steps in the theoretical formalism, particularly in the early chapters. Thus a medical practitioner with some mathematical "bent" and a desire to understand the behaviour of contrast agents would be greatly assisted by the commentary which accompanies each mathematical step.

In addition to the theoretical development, there is a comprehensive treatment of the experimental methods used for the measurement of contrast agent properties. This would be of great assistance to any group without previous ultrasonic measurement expertise wishing to perform measurements of ultrasonic contrast agent properties in their own lab. Such measurements would provide a greater understanding of contrast agent bubble behaviour. They could also be used to compare the behaviour of different contrast agents under controlled conditions.

The latter chapters provide a comprehensive account of higher harmonic and non-linear bubble behaviour. There are extensive simulations of behaviour of various contrast agents, as well as measurements to verify the simulations. These would be of interest to the serious investigator of the newly developing areas of contrast agent application in harmonic and inverted pulse imaging.

The market for this book would be mainly as a library reference for medical practitioners. It would also provide an excellent handbook for those medical practitioners or scientists wishing to delve deeper into contrast agent properties, either for quantitative studies, or for comparison of the performance of different contrast agents.

**Dr D E Robinson AM**

## Judith Elaine (Pru) Pratten **DDR (UK) DMU (UK) DMU (ASUM)**

On 21 September 2002, Pru Pratten's contribution to ASUM was recognised by the award of Life Membership of the Australasian Society for Ultrasound in Medicine.

Pru joined ASUM in 1978, shortly after her arrival in Australia. She always placed a high value on education, which she saw as essential to improve standards in her chosen field of Musculoskeletal Ultrasound. She organised and taught at countless meetings, was an active speaker on the national scene and a regular presenter at ASUM Annual Scientific Meetings.

Pru served ASUM at branch level from 1989, serving as Branch Secretary from 1990 to 2000. She was elected to the Council in

1995 and served as Chair of the Sonographer Affairs Committee from 1999 until ill-health forced her resignation in 2000.

Pru lived with Cancer from 2000. Although the treatment regime meant that she could no longer practice, she continued to teach, delivering lectures, seminars and workshops, and writing papers.

Sadly Pru lost her battle with Cancer and passed away on 26 October 2002.



## Kaye Griffiths **AM RN Cert Midwifery DMU**

On 21 September 2002, Kaye Griffiths' contribution to ASUM was recognised by the award of Honorary Fellow of the Australasian Society for Ultrasound in Medicine.

Kaye's involvement in ultrasound practice and research has spanned 31 years and she has been an active member of ASUM since 1971. As a research sonographer she has made major contributions to the development of ultrasound technologies and examination techniques and has published extensively in a variety of international journals.

Kaye has always placed a premium on professional involvement as a means to contribute to the development of the profession. As a member of ASUM she has served as a branch Secretary and Chairman, Councillor, Secretary and President of the ASUM Ultrasonographers Group, Secretary and Chairman of the Board of Examiners for the DMU, Inaugural Chairman of the ASAR, and member of the Editorial Board of the ASUM Bulletin. On the international stage Kaye, represented ASUM on the steering committee to plan the formation of the World Federation of Sonographers (WFS) and, from 1994 to 2000, served as inaugural President of the WFS.

Throughout her career Kaye has maintained an involvement in education. She was one of the twenty-two sonographers who were the first cohort to be awarded ASUM's DMU in 1979. She has been a regular presenter at Australian and International conferences and congresses, convened the First World Congress of Sonographers, was a member of the scientific organising committee of the Fourth WFUMB Congress and founded ASUM's DMU Preparation Course.

In 2002 Kaye's contribution to ultrasound science and promotion of the ultrasonography profession was recognised by her appointment as a Member of the Order of Australia.

Kaye's service to ASUM continues; most recently as Assistant Honorary Secretary. In 2002 she was again elected to the ASUM Council.



## Andrew Ngu **MBBS MRACOG FRACOG DDU COGUS**

On 21 September 2002, Andrew Ngu's contribution to ASUM was recognised by the award of Honorary Fellow of the Australasian Society for Ultrasound in Medicine.

Andrew currently holds positions in two hospitals: Deputy Director of Ultrasound Department, Royal Women's Hospital; Assistant Specialist in Ultrasound, Royal Women's Hospital, Carlton; Obstetrician and Gynaecologist, The Northern Hospital, Epping

Andrew has been an active member of ASUM since 1984. He is a long-standing DDU examiner, and an active speaker at ultrasound meetings locally and internationally. He served at branch level as a committee member and Treasurer before being elected to the ASUM Council in 1991. As a Councillor, Andrew chaired the Medical Affairs Committee and served as Assistant Honorary Secretary to the late Beresford Buttery. Andrew's term as Honorary Secretary extended from 1995

until his election as President in 1998. As President he oversaw the fruition and consolidation of the expanded educational activities that he had facilitated and contributed to over his period as an executive member of Council. It was also a period in which structural change was initiated which culminated in the appointment of the first Chief Executive Officer, the restructuring of the Council, and the development of liaisons with sister organisations in Asia.

Following his term as President and Past President, his term on Council finished in 2001. However Andrew continues to contribute his expertise to ASUM as a volunteer.



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**ASUM 2003**  
**(repeat page 27 of August Issue)**

## ASUM Beresford Buttery Overseas Traineeship

(Sponsored by GE Medical Systems)

Since its foundation GE Medical Systems has constantly been at the forefront of research and technical innovation, with GE today being recognised as a world leader in the supply of diagnostic imaging systems.

It is with great pride that GE has the opportunity to offer an annual traineeship in the field of obstetric and gynaecological ultrasound, in memory of Beresford Buttery FRACOG, DDU, COGUS who made an inestimable contribution to his profession.

The award will cover attendance at an appropriate educational program at the Thomas Jefferson Research and Education Institute in Philadelphia and will include tuition fees, economy airfare and accommodation for the duration of the course (usually 4 days).

The award will be made to applicants:

1. who seek to further develop their skills and experience in obstetric and gynaecological ultrasound,
2. have as a minimum qualification Part 1 of the DDU or DMU (or equivalent) or have been awarded the DDU or DMU (or equivalent) within the last 5 years (since 30 June 1998) and
3. have been a financial member of ASUM for a minimum of 2 years prior to the closing date.

Applications should include:

- ❖ a *curriculum vitae*
- ❖ details of current and post employment, particularly in the field of obstetrics and gynaecology
- ❖ testimonials from two referees in support of the application including contact address and telephone number
- ❖ an outline of professional goals and objectives
- ❖ an indication of benefit from award of the Traineeship
- ❖ The successful applicant is asked to provide a written report on return from the course at Thomas Jefferson Research and Education Institute.

Applications addressing the criteria should be forwarded by **Friday 27 June 2003** to:

GE Beresford Buttery Overseas Traineeship  
c/- ASUM  
2/181 High Street  
Willoughby NSW 2068 Australia

## ASUM Chris Kohlenberg Teaching Fellowships 2003

(Sponsored by GE Medical Systems)

Proposals are invited for the 2003 Chris Kohlenberg Teaching Fellowships sponsored by GE Medical Systems.

In 2002 the Education Committee accepted program proposals from the New South Wales and Victorian branches for the 2002 Teaching Fellows. These programs have been successfully completed with. Reports are published in this Bulletin.

The Chris Kohlenberg Teaching Fellowship was established by ASUM in association with Diasonics GE to increase the opportunity for members outside the main centres to have access to quality educational opportunities. It has been awarded annually since 1998 providing educational opportunities for members in New Zealand, Queensland, New South Wales, Northern Territory, Western Australia, Victoria, South Australia and Tasmania. It is named to commemorate Dr Chris Kohlenberg, who died while travelling to educate sonographers.

The ASUM Chris Kohlenberg Teaching Fellowship is awarded on the basis of demonstrated knowledge, clinical background and teaching ability. The Teaching Fellow is appointed by the Education Committee, which considers nominations from committees, branches and members of ASUM. The Teaching Fellow will conduct workshops and meetings primarily (but not exclusively) in Australian and/or New Zealand centres that would not normally host scientific meetings. In addition the Teaching Fellow will be available to conduct workshops in hospital ultrasound departments during the day.

Members wishing to nominate for the fellowship should provide details of their background and experience which qualifies them for appointment as the Chris Kohlenberg Teaching Fellow.

Branches wishing to propose programs for the 2003 Teaching Fellows should, in the first instance, contact Keith Henderson ph (02) 99586200 fax (02) 99588002 email [khenderson@asum.com.au](mailto:khenderson@asum.com.au)

Nominations and proposals should be addressed to:

The Education Officer  
ASUM  
2/181 High St  
Willoughby 2068 Australia

and should be received before 28 February 2003.



### DMU Preparation Course, Sydney

Date: 12th to 16th February 2003

#### Part 2 Preparation Course

The purpose of this course is to provide an overview of the knowledge and understanding of anatomy, physiology, pathology, instrumentation and relevant physical principles of ultrasound. Participants will also have the opportunity to seek guidance concerning the interpretation of the DMU Syllabus and preparation strategies for the DMU Part 1 Examination.

#### Part 1 Preparation Course

The purpose of this course is to provide registrants with an interactive program to assist their preparation for the DMU Part 2 Examination. Tutorial and Workshop Sessions will be conducted in small groups and will include study methods for the DMU examination, interactive physics program, pathology museum, mock OSCE, film reading, scanning sessions and the opportunity to talk to DMU examiners.

For further Information:

Contact Tim Brown

Email: [tbrown@asum.com.au](mailto:tbrown@asum.com.au), Ph: 02 9958 6200

Registration brochures can be downloaded from our website [www.asum.com.au](http://www.asum.com.au)

## ASUM Victoria Branch 2003 Ultrasound Lecture Series

The 2003 Ultrasound lecture series will take place on Wednesday evenings commencing February 5 to July 30.

The ASUM lecture series has been prepared to assist ultrasound trainees with the ASUM DMU, for registrars in training and for those who would like a broad update in a particular area of ultrasound.

Lectures cover Physics, Obstetrics/Gynaecology, Paediatrics/Abdomen, Small Parts/Musculoskeletal and Vascular Ultrasound.

Registration can be for individual sections or the whole series. Early registration is recommended.

**TIME:** Wednesday evenings 6.30 pm to 8.00 pm

**VENUE:** Radiology Lecture Theatre  
2<sup>nd</sup> Floor (above Emergency)  
The Royal Melbourne Hospital

<b>COST:</b>	Whole Series	ASUM members	\$200
		Non-members	\$250
	1 Section	ASUM members	\$60
		Non-members	\$75

Cheques payable to ASUM Victoria Branch

#### Registration and enquiries, contact:

Merilyn Denning, Department of Radiology, The Royal Melbourne Hospital, RMH Post Office Victoria 3050; Phone 03 9242 8786 or Fax 03 9342 8369.

**Convenor:** Dr Alex Taylor

## Anna Parsons Lectures



Dr Anna Parsons is Professor of Radiology at the University of Florida, Tampa, USA. She is well known for her expertise in gynaecological imaging, particularly in the area of endometrial assessment and the role of ultrasound in the management of the infertile patient. In April ASUM was delighted to have Dr Parsons present 5 talks at the 8<sup>th</sup> Obstetric and Gynaecology Conference, entitled:

- Endometrial Assessment
- Chronic Pelvic Pain
- Sonographic Workup of Premenopausal Bleeding
- Ultrasound of the Uterus and Ovary in Postmenopausal Women
- Ultrasound and Infertility (including tubal assessment)

These talks were digitally recorded onto video and are now available for purchase on CD-ROM or video CD. The CD-ROM set contains additional written material supplied by Dr Parsons and is approved by ASAR and RANZCR for CPD points.

Anna Parsons Lectures CD Set (5 talks)	Members	\$198
	Non members	\$495

Individual titles will be available for rental through the video library for \$38.50 (members only).

## CD-ROM Pelvic Floor Ultrasound H.P. Dietz MD FRANZCOG DDU

This CD is designed to give an overview of pelvic floor imaging by translabial/ transperineal ultrasound. While other imaging methods can be used to assess pelvic floor pathology, such as CT, MRI and transvaginal/ transrectal ultrasound, translabial ultrasound is the most patient- and doctor-friendly form of imaging available at present.

This CD-ROM is issued to ASUM members as a complimentary member service. Additional copies of the CD-ROM may be purchased. To obtain an order form go to <http://www.asum.com.au> and follow the links to Education CD-ROM Resources, or contact ASUM, 2/181 High St, Willoughby, NSW 2068 Australia; ph +61 2 9958 7655; fx +61 2 9958 8002; [education@asum.com.au](mailto:education@asum.com.au).

To view this program you need a computer with Microsoft PowerPoint® and MPEG2 player software installed. Elecard® MPEG2 Player may be installed from the CD. ASUM accepts no responsibility for the performance of this program on your computer system as this will depend upon the specifications of your computer system.

The production of this CD-ROM has been sponsored by:

# TOSHIBA



# AIUM NEWS RELEASE

Contact: Stacey Wagner, Public Relations Coordinator

Tel: 301-498-4100 • E-mail: [swagner@aium.org](mailto:swagner@aium.org)

## AIUM to Host 2003 WFUMB Congress in Montréal Deadline to Submit Abstracts Is July 1, 2002

### For Immediate Release

October 7, 2002

**LAUREL, MD**—The American Institute of Ultrasound in Medicine (AIUM) will host the 10th Congress of the World Federation for Ultrasound in Medicine and Biology (WFUMB), June 1–4, 2003, at the Palais de Congrès de Montréal in Montréal, Canada. Online abstract submissions will be accepted until November 5, on the AIUM website at [<www.aium.org>](http://www.aium.org).

### Reaching the Ultrasound Community

With two multidisciplinary societies, AIUM and WFUMB, joining together for one worldwide ultrasound event, presenters will have the opportunity to reach a far wider audience of individuals with a common interest in diagnostic ultrasound than would be possible at any other singular subspecialty meeting. Professionals from many medical specialties as well as basic scientists, engineers, manufacturers, nurses, physicists, radiological and vascular technologists, sonographers, and veterinarians will be able to share ideas, the latest research, new developments, and future innovations in diagnostic ultrasound all in one place.

### Abstract Submission

The program will include symposia, scientific papers, case reports, and posters. Unlike other organizations, the AIUM will allow submission of abstracts that have been submitted and/or presented at other meetings. Abstracts must be submitted online no later than November 5, 2002, and must follow the instructions for preparation as outlined in the guidelines for abstract submission which are clearly described at [<www.aium.org>](http://www.aium.org). Online submission in English is the only method for receipt of abstracts.

The eighteen ultrasound categories for abstract submissions include abdomen; bioeffects; breast; cardiology; emergency; gynecology and first-trimester obstetrics; instrumentation; intervention; musculoskeletal; obstetrics; ophthalmology; pediatrics; physics; small parts; sonography; telemedicine; urology; and vascular.

### New Investigator Award

The New Investigator Award, with a prize of \$1,000, will be offered to a new investigator (resident, fellow, faculty member, or sonographer in practice less than five years) who submits and presents the best scientific abstract at the 2003 AIUM-hosted WFUMB Congress.

### About Montréal

Montréal has a unique mix of historical, natural, and cultural offerings to satisfy all types of visitors, including festivals, museums, shopping, captivating architecture, and great recreation. In addition, Montréal offers many hotels to choose from, all with affordable rates.

*The AIUM is a multidisciplinary organization dedicated to advancing the art and science of ultrasound in medicine and research through its educational, scientific, literary, and professional activities. The AIUM has been able to promote the safe and effective use of ultrasound in clinical medicine for 50 years.*

###

# ABSOLUTELY POSITIVELY RADIOLOGY

**FIRST ANNOUNCEMENT**  
**2003 ANNUAL SCIENTIFIC MEETING**  
Wellington Convention Centre  
Wellington, New Zealand  
25-27 July 2003



## RANZCR NEW ZEALAND BRANCH

*In association with*

## NEW ZEALAND BRANCH OF THE AUSTRALASIAN SOCIETY FOR ULTRASOUND IN MEDICINE

This exciting conference is the inaugural combined meeting of the New Zealand branches of the RANZCR and ASUM which promises to be a fantastic educational and social weekend for radiologists, registrars and sonographers. A dynamic programme in radiology, ultrasound and radiation oncology is planned with internationally recognised experts in their field with proven enthusiasm and ability to teach. The invited faculty comprises speakers from North America and Australia.

### *Invited Faculty*

#### *RANZCR Diagnostic*

- Dr Phillip F J Tirman MD, Musculoskeletal MRI Radiologist, National Orthopaedic Imaging Associates, California
- Dr Suresh K Mukherji MD, Head and Neck Radiologist, Chief of Neuro and Head & Neck Radiology, University of Michigan, Ann Arbor
- 2003 Rouse Fellow, Dr Andrew Little, FRANZCR, Interventional & Body Imaging Radiologist, Director of Radiology, Cabrini Hospital, Melbourne

#### *Radiation Oncology*

- Speaker to be advised

#### *ASUM*

- Dr Edward A Lyons MD, Ultrasound Radiologist - Obstetrics & Gynaecology, University of Manitoba, Winnipeg
- Further Ultrasound speaker to be advised

*Wellington, the capital city and the arts and cultural centre of New Zealand, is a vibrant, compact, cosmopolitan city of plazas, restaurants, cafes, boutiques and corporate towers, criss-crossed by green belts and rimmed by the sea.*

*The Wellington Convention Centre is just 15 minutes from the national and international air terminals and within easy walking distance from major hotels, shopping, Te Papa Museum, art galleries and the waterfront.*

**Convenors**  
Dr Clinton Pinto  
Dr Brendan Murray  
Dr Phil Borrie  
Ms Vanessa Dawson  
... from Tauranga

***Call for Abstracts for***  
**ASUM/RANZCR NZ Proffered Papers and Posters\***  
**will be made in February 2003**  
***Get cracking!!***

\*conditions apply

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# Policy Statement on normal ultrasonic fetal measurements<sup>1</sup>

To The Editor

We believe that ASUM are wrong in adopting the Campbell Westerway charts<sup>2</sup> as the Australian standard

The main 'selling points' of the Campbell Westerway charts have been the large number of fetuses scanned, on a multicultural population in Australia. However, methodological rigour is by far the most important feature of good charts. Issues that affect the accuracy of chart development include patient selection, an accurate menstrual history, a strict protocol of how the measurements are to be taken, an assessment of inter-observer and intra-observer variability, and careful statistical analysis.

As we discussed in our letter to the ANZJOG<sup>3</sup>, when establishing ultrasound gestational age charts a careful menstrual history is mandatory when dating pregnancies according to their LMP (last menstrual period). Only pregnancies in which the woman is certain of the date of her LMP and has a regular cycle of close to 28 days should be included. Women taking the OCP (oral contraceptive pill) in the previous 3 months also should be excluded. Ovulation usually occurs approximately 14 days before the 1<sup>st</sup> day of menses (rather than 14 days after the 1<sup>st</sup> day of the last menstrual period). In clinical practice, ovulation more frequently occurs after day 14 than before (a cycle length of 35 days is thus more common than 21 days). It has been found that ovulation not infrequently occurs less than 14 days before menses even in women with a regular 28-32 day cycle.<sup>4</sup> This introduces an inaccuracy into the development of charts based on the LMP which is easily compounded if an adequate menstrual history is not taken.

The charts previously used by ASUM performed well in the clinical setting.<sup>5</sup> The new charts do not always do so. Measurement of the early crown rump length (CRL) should most accurately reflect gestational age and the Silva charts did this well.<sup>6</sup> In the current ASUM policy the very early CRL measurements are not in keeping with clinical practice. A 2mm fetal pole is not 5+3 weeks' gestation.

Ultrasound now offers us the opportunity to date pregnancies very accurately up to 22 weeks' gestation.<sup>7,8</sup> The previous ASUM biparietal diameter (BPD) charts used 1mm

increments to enable a precise assessment of gestational age.<sup>9</sup> The practice of rounding down, utilized in the current ASUM charts, reduces this accuracy. In addition the calculation of the head circumference using a formula designed for those measuring the BPD and occipitofrontal diameter (OFD) from the outer skull to the outer skull reduces accuracy.

We understand that Sue Campbell Westerway has put a lot of time and effort into her charts. However we believe that it is inappropriate for them to have become ASUM policy. As the principal aim of medical practice is optimal patient care we cannot accept the current ASUM charts. We urge ASUM to review their policy.

**Debbie Nisbet**  
**Lachlan de Crespigny**

## References

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5. Australasian Society for Ultrasound in Medicine: Policies and Statements. November 1998; D7
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## Placement at The Queen Elizabeth Hospital, Adelaide

Dear Dr Hong

Thank you for giving me the opportunity to be placed on an attachment with the Diagnostic Radiology Department of The Queen Elizabeth Hospital in Adelaide, South Australia.

The Sonographers at TQEH have been very kind to me. They were very helpful and patient in dealing with me and clarifying my questions. I am especially grateful to Sonographer Tanya Andrews for providing me with some useful reading materials, and for taking the time to drive me back to the hotel during my stay there.

I was impressed with the size of the ultrasound rooms in TQEH. They are very spacious. I was also impressed by the great concern given to patient's privacy. The importance is clearly evidenced by the presence of curtain in the room, the display of signage during certain procedures, and by making the changing rooms and washrooms directly adjoin the ultrasound rooms. The presence of sinks, gloves of various sizes indicate that the staff convenience was also important.

I was pleased to learn that the Center does a wide variety of ultrasound investigations. These include: (i) peripheral arteries and veins (ii) obstetrics and gynaecology (iii) abdominal (iv) ultrasound guided removal of implanon contraceptive device, (v) ultrasound guided biopsy of liver lesion, and (iv) ultrasound guided drainage of pleural effusion.

This variety of examinations makes the Sonographers task more interesting, challenging and less monotonous.

It is nice to learn that our practices in the Diagnostic Radiology Department at SGH are quite similar to those in TQEH. I would certainly recommend my management that my colleagues be given the opportunity to undergo similar attachment with TQEH.

Best wishes and warmest regards

**Rafidah Abu Bakar**

## Reply to letter from Debbie Nisbet and Lachlan de Crespigny

There has been much discussion about the Biometric data produced by Campbell Westerway. As with all studies of biometric data and gestational assessment there is not unanimity of opinion regarding the validity of methodology and their results so derived. Such is the case again with this data which has been adopted by the Society.

ASUM's adoption of this data was dependent upon the methodology being approved by Council which it duly was, and publication in a reputable journal. This also occurred when the data was published in the Australia and New Zealand Journal of Obstetrics and Gynaecology.

The methodology quite correctly has been debated and its validity questioned. It was considered initially however that the data collection represented "real world" conditions qualified with sonographers and sonologists using a mix of good quality equipment. The methodology was approved,

the statistical analysis was performed by reputable experts in the field and it was duly published and appeared in the Journal. On this basis Council felt it appropriate to adopt the chart, recognizing the limitations that might exist in such a data collection.

As with all ASUM Policy future revision is certainly possible should a future council wish to revisit the topic and embark on further data collection. The Policy has not been rescinded and remains adopted as Policy until formally rescinded. This is not anticipated by the current Council however in some time in the future the topic will be revisited, possibly through the research foundation.

Correspondence regarding this matter is now closed.

**Dr Glenn McNally**  
President

## Judith “Pru” Pratten 1952-2002

Pru lost her courageous battle with breast cancer quietly on the morning of Saturday 26 October 2002. We lament the passing of one of the most loved and inspirational sonographers of our time. Pru was one of the great contributors to her chosen profession of sonography.

Pru was educated in the UK, qualifying and working as a radiographer and sonographer before migrating to Australia in 1977. She was amongst the first to be awarded the DMU in 1979 and throughout her career was professionally very active. A member of ASUM from 1978, Pru was the Secretary of the South Australian ASUM State Branch from its inception until 2000, served on ASUM's Federal Council from 1995 and was Chairman of the Sonographer Affairs Committee at the time that her illness forced her resignation from the Council in 2000. In spite of her illness, Pru continued to write, teach and seek professional development until the last few weeks of her life. In 2002 her contribution to the Sonography Profession was recognised by the award of Life Membership of ASUM.

Pru was a great educator. She was the great doyen of musculoskeletal ultrasound, believing that if musculoskeletal ultrasound was done better by everyone, musculoskeletal ultrasound would flourish as it should. She organised countless state branch meetings and annual scientific

meetings. It seems hard to imagine an ASUM conference without Pru's lectures and especially the live scanning workshops. As a teacher, Pru's influence was felt throughout ASUM's membership and in the wider ultrasound community. Many people were touched by Pru's presence, her positive attitude and zest for life at the recent ASUM 2002 Annual Scientific Meeting, where she presented at a session on the Skills Day and signalled her intention to present again at ASUM 2003 in Perth.

Pru knew no boundaries in her endeavour to pass on knowledge both in Australia and overseas. Her lessons live on.

Pru's uplifting spirit, astute intellect and personal qualities of passion, patience, dedication and generosity will be missed most of all. A true measure of Pru's finer qualities emerged when she was awarded her Life Membership. She was overwhelmed by the honour, revealing her humility and grace with the simple words, "Oh, oh my ... I don't deserve this".

Pru enriched our lives. She is remembered with fondness and gratitude.

**Stephen Bird**  
**Keith Henderson**



# Visit by Dr Cheryl Bass to Shepparton as the GE Chris Kohlenberg Teaching Fellow 29 & 30 October 2002

A lecture was presented by Cheryl Bass at the Department of Rural Health Lecture Theatre (Shepparton) on Tuesday 29<sup>th</sup> October. The evening was organised by Goulburn Valley Imaging and sponsored by GE. A delicious array of food was available prior to the lecture which commenced at 6.00pm

The meeting was well attended with 7 radiologists and 15 sonographers representing Shepparton, Echuca, Benalla, Deniliquin, Kilmore and Seymour.

Cheryl Bass presented an informative and interesting lecture covering the sonography of the lower limb dividing the session into: a) foot and ankle and b) knee.

The anatomy of the region was well covered in her slides with particular reference to the importance in sonography of knowing your anatomy! She included objectives of the examination, areas that need to be examined particularly in relation to the specific area of tenderness as this is often very helpful in identifying pathology.

Discussion included normal and abnormal anatomy and Cheryl had quite an extensive range of images of pathology. Questions were invited at any stage throughout the evening.

Feedback indicates that all present found the session very worthwhile.

## 30 OCTOBER

Cheryl spent the day at Goulburn Valley Imaging's main practice, at Nixon Street, working with Sonographers to improve scanning techniques which provided invaluable experience to those able to take advantage of this.

At lunchtime, she presented a lecture at GVI which was attended by 9 Sonographers and 3 Radiologists. This session concentrated on the hand/wrist and elbow covering anatomy, normal and abnormal pathology and scanning techniques. We were also able to watch her scan patients and discuss different approaches and techniques.

This was the first lecture of this type to be held in Shepparton and all Sonographers were very grateful for the opportunity to attend, without having to travel hours to do so.

Thank you again to Cheryl Bass, ASUM and GVI for the organisation and to GE for their sponsorship.

**Eileen Brettig**

# Dr Andrew McLennan's visit to Wagga Wagga as the GE Chris Kohlenberg Teaching Fellow 14 & 15 November 2002

We are extremely grateful to ASUM and GE for sending Dr Andrew McLennan down to Wagga Wagga, and to Andrew being a willing Fellow.

On the evening he arrived he led discussion on 2 topics, namely Gynaecologic Pathology, and Nuchal Translucency. Both these discussions were invigorated by his text and image slides. Attending were all the local sonographers and trainees, plus some future trainees and one radiologist. All found the discussion of value, and the Gynaecologic Pathology discussion was a natural precursor to the following day's sonohysterograms. I was also grateful for Andrew reminding us of the legacy that Chris Kohlenberg left, now honoured by the GE Fellowship.

The next day Andrew spent a busy time in the main ultrasound practice site at Calvary Hospital, where he was available for advice and direct hands-on scanning tuition.

This proved invaluable, as we performed 3 sonohysterograms, found a difficult NT that had to come back later in the day, and numerous other interesting O&G cases. We made bookings double length so that everyone would have the opportunity to learn from Andrew. Andrew's knowledge and skill was evident, with all of us learning a number of things on the day. In addition, Andrew provided us with printouts from the previous evening's lectures, as well as print outs of 2 other lectures, namely Sonohysterography and The Cervix in Pregnancy. He was quizzed incessantly and stood up to the barrage admirably.

That evening I drove him to Wodonga so that he could deliver his commitments there the next day. During the drive I was able to quiz him on even more O&G ultrasound issues. Overall, his visit was very valuable to us.

**Nick Stephenson**

## ASUM 2002 Convenor's report

As convenor of the ASUM 32<sup>nd</sup> Annual Scientific Meeting, I am pleased to report that the meeting was well attended and proved to be a beneficial educational and networking experience for all in attendance.

The scientific content was excellent and the AV was well managed by Staging Connections. There were plenty of networking opportunities for registrants and exhibitors and it was considered by most to have a very friendly atmosphere. The overseas and local speakers felt welcome and mixed freely with the registrants.

Conrad Jupiters, at Broadbeach on the Gold Coast, proved to be an excellent venue. Having all the conference rooms in the same area is advantageous for the registrants and exhibitors.

The Professional Conference Organisers, ICMS assisted with the organization of the meeting for the first time in 2002. Despite some teething problems, I am certain we have paved the way for much more efficient running of these meetings in the future.

I would like to thank ICMS and all the members of the organising committee including Neil Orr for selecting and inviting the expert faculty, Geoffrey Stieler for his efforts in organising the skills day, Liz Carter, Yvonne Butcher, Stan Barnett, Glenn McNally and Mary Young.

I would also like to thank Caroline Hong and all the staff at the ASUM secretariat for all their help and support during the past few years.

**Roslyn Savage**

## ASUM 2002 Medicolegal session on Fri 20.9.02

While other sessions of the ASUM 2002 Meeting provided interesting topics and information, I was most impressed by the medicolegal session on Friday morning. My exposure to medicolegal risk is not from antenatal ultrasound but, despite this, I found the presentations and the following discussion fascinating.

Dr Callaghan presented a number of cases from the viewpoint of a medical defence organization, and as usual such presentations have the underlying purpose of what one could call primary and secondary prevention of litigation, the latter being 'damage control'. In some instances this is straightforward and does not require further elucidation. At other times the situation is much more complex, and that's really no different from other areas of medicine.

This became particularly clear to me during Mr. John Chamber's talk, a plaintiff lawyer who stated what we'd all dearly want to believe: nothing dreadful is going to happen to you, provided you behave like a decent human being. When an unexpected outcome occurs, talk to the patient and his/ her family, give as much information as requested, be kind and supportive, and trust in the country's legal system and your medical defence organisation.

I'm glad I have no firsthand experience of the Australian legal system (yet). I suspect however that there are lots of us around who have been cured of this trust, and this became very evident in the following discussion. Some of the contributions made me grateful that I have selected another subspecialty, not O/G ultrasound as originally planned. Evidently antenatal ultrasound is as much of a minefield as clinical obstetrics.

There are basic problems with tort law in general and the jury system in particular in all countries following the English legal system, and one hopes that those issues are being addressed. However, the medical profession may well have contributed significantly to the problem. Firstly, there is the expert witness, and while my experience of such is limited to an obstetric case a long time ago, it is evident that expert opinion in Australia and elsewhere is often anything but 'expert'. How else does one explain the continuing shocking

verdicts in Cerebral Palsy cases despite good scientific evidence that most such neurological impairment is in fact caused by ante- rather than intrapartal factors?

Secondly, there is the problem that even the best informed expert opinion necessarily has to be based on the available literature, an issue that was briefly debated regarding the pickup rate for major congenital heart defects. Maybe it is time to reconsider how we use and evaluate literature. There is considerable bias in literature, arising from such disparate causes as faulty study design or data interpretation, fabrication, and the different forms of publication bias.

An example from my own field of urogynaecology is bone anchor surgery. Anybody conducting a literature search will come to the conclusion that bone anchor colposuspensions are wonderful operations that cure just about everybody of their stress incontinence. It's odd then that virtually nobody uses these techniques now, about five years after their introduction. The reason is that bone anchor colposuspensions don't work very well. You will have difficulty concluding that from the literature and that's the result of bias.

To translate that to pickup rates for major malformations: Most forms of bias will conspire to inflate pickup rates, i.e., result in reports that are too optimistic. We (or some of us) are constantly telling the world how well we're doing, and the world hits back when people notice that that's not quite true.

Maybe it's time for us to scrutinize published data a lot more than we've done to date. I hope for a future in which national and international medical conferences have scientific committees that require presenting authors to bring with them all data collection devices (recordings, printouts, videos, datasheets), raw data (spreadsheets or databases) and all statistical analyses used in presented work so that the committee can conduct random checks of this material- a bit like drug testing at international sporting events. It's high time to show the world that we're not quite as good as we'd all like to be, and that we're trying to be honest about it.

**H P Dietz MD (Heidelberg) FRANZCOG DDU  
Toshiba ASUM ASM Scholarship 2002**

# ASUM 2002 Annual Scientific Meeting

I would like to begin this report by thanking the convenors and speakers for an excellent conference. The content was well balanced with something to interest everyone. As a paediatric sonographer it was most encouraging to see paediatric ultrasound so well represented at this conference.

The opening plenary session set the standard of the conference with Dr Deborah Levine giving a well-illustrated presentation on the benefits of fast MRI techniques in foetal imaging especially evaluating CNS abnormalities which is often limited using ultrasound. Dr Flemming Forsberg followed with a dazzling presentation on vascular 3D ultrasound imaging showing us some of the new advances that are being made especially when contrast agents are used.

In the paediatric concurrent session, Dr Gillian Long gave a very good presentation on ultrasound of the eyes in children, which is an area I'm particularly interested in. Dr William Shiels followed with an excellent presentation on paediatric spine. Although I am familiar with scanning the paediatric spine, the interventional side was certainly new. Should I be asked to scan a spine for a failed lumbar puncture I'd now be able to recognise the imaging characteristics of spinal haematoma. Dr Albert Lam gave a very good comprehensive and informative presentation on hydrocephalus. He talked in depth about the various causes of ventriculomegaly and respective ultrasound findings.

The Asia link plenary session was very informative. Dr Albert Lam gave an excellent presentation on vascular birthmarks in children, which included ultrasound characteristics that can help differentiate haemangiomas from other vascular malformations and the importance of this for the management of the child.

The plenary session the following day was one of the highlights of the conference for me. Dr Forsberg's presentation on elastography was very interesting as he showed us, in his entertaining style, state of the art developments in this exciting new field. Dr Shiels gave an impressive presentation on scanning the congenital clubfoot. He showed us techniques for imaging clubfoot including dynamic stress views to provide pertinent information for the orthopaedic surgeons and best outcome for the child.

Another session I found useful was Dr Lucia Pemble's presentation on renal artery Doppler. Dr Pemble gave practical advice on how to scan and interpret the ultrasound findings of renal arteries.

In the musculo skeletal session, Dr Shiels gave an informative presentation on ultrasound guided intra-articular and tendon sheath injections for patients with rheumatoid arthritis. Dr David Lisle gave a very entertaining and informative presentation on inguinal hernias that was particularly useful.

Three days after the conference I scanned a young boy for suspected scrotal mass. Remembering Dr Lisle's advice I scanned in the correct plane, the boy coughed and I was able to demonstrate omentum sliding down the inguinal canal and 'ballooning' of the canal.

I would like to thank ASUM and Toshiba for giving me the opportunity to attend this conference from which I learnt a lot. Also thank you to the social convenors for a great programme. My friends and I had a fun night at Sea World.

**Lorna Hardiman GradDipHealthSc (Medical Sonography)  
Sydney Paediatric Radiology, Westmead  
Toshiba ASUM ASM Scholarship 2002**

## ASUM 2002 Prize Winners

Congratulations to the following winners:

**GE Beresford Buttery Overseas Traineeship**  
*Stanley Ng*

**Toshiba Giulia Franco Scholarship for New Presenters**  
*Lisa Clarke*

**Philips Best Sonographer Research Presentation Award (\$2000)**  
*Martin Necas*

**Acuson a Siemens Company Best Research Presentation Award (\$1500)**  
*Hans Peter Dietz*

**Acuson a Siemens Company Best Clinical Presentation Award (\$1000)**  
*Andrea Gibb*

**Toshiba ASUM Annual Scientific Meeting Scholarships (\$800)**  
*Hans Peter Dietz and Lorna Hardiman*



## ASUM 2002 at Conrad Jupiters, Gold Coast







# New Members April - September 2002

## APOLOGY

Due to recent changes in our membership database, our New Members List for April – June 2002 published in our August 2002 Bulletin issue contained duplicate entries. ASUM apologises for any inconvenience this may have caused. The following list replaces that published in August 2002 issue:

### APRIL 2002

#### Full Members

Jilane Anderson	NSW
Michael Barker	WA
Tim Bate	NSW
Neil Berlinski	VIC
Ron Chang	QLD
Selinter Davison	NSW
Peter Dobson	VIC
Stephen Doust	NSW
Shiri Dutt	QLD
Soak Fung Foong	NSW
David Freidin	VIC
Bryn Granland	WA
John Hehir	ACT
Ian Highet	QLD
Peter Hunter	NSW
Maria Jenkins	NSW
Rajeev Jyoti	ACT
Geoff Kelsey	QLD
Cushla King	NZ
May-Wan Lee	NSW
Joanne Lennox	NSW

Julie Lukic	NSW
Joanna Marsden-Williams	NSW
Stephanie Martin	NSW
Adele McDonnell	WA
John McLaughlin	QLD
William Mott	NSW
Philip Mutton	ACT
Premakanthie Naidoo	NSW
Swaran Nand	NSW
Aisha Naqi	NSW
Yvonne Newton	NSW
Parvin Niknafs	NSW
Risto Nikolich	NSW
Guy O'Connell	NSW
Isidor Papapetros	NSW
Julia Parij	NSW
Geoff Paul	NSW
Helen Peters	NSW
Martin Ritossa	SA
Kenneth Roper	NSW
Susan Rowe	NSW
Avi Saks	NSW

Wafa Samen	NSW
Paula Scanlon	SA
Peter Scott	ACT
Ursula Selopranoto-Ridley	NSW
Ken Sikaris	VIC
Grant Smith	WA
Lisa Stenberg	NSW
Katrina Stevens	NSW
Sandra Thorpe	NSW
Geoffrey Trim	NSW
Simon Turner	WA
Michael Uhr	QLD
Toni Uptin	QLD
Wendy Waghorn	NZ
Nikki Whelan	QLD
Jeanne White	WA
Jane Wood	SA

#### Associate Members

Brooke Cunningham	NSW
Nicholas Vanderpoll	NSW
Jacqueline Williamson	VIC

### MAY 2002

#### Full Members

Guy Armstrong	QLD
Rebecca Falkenberg	NSW
Isobel Furnival	NZ
Geoffrey Johns	VIC
Jill King	VIC
Susannah Mahar	VIC
Rob McGregor	ACT
Matthew Morrall	NSW
Linda Passfield	SA
Tanya Pilgrim	QLD
Veronique Wilson	VIC

Ali Elkhaled	NSW
Fernando Fernandez	NSW
Robert Fowler	VIC
Jennifer Gerlach	NSW
Anna Glass	NZ
Xiangyong Gu	NZ
Micaela Gumbley	NSW
Miao Miao He	NSW
Rebecca Hunter	NZ
Sanja Ivkovic	NSW
Merrin Jackson	NSW
Graham Jenkins	WA
Sarah Johns	WA
Huw Jones	QLD
Peter Ling	NSW
Kate Loveday	WA
Kathryn MacKinlay	NZ
Kimberley Maclean	NZ
Katie Maslin	WA
Rosemary Mason	WA
Fiona McIntyre	NSW
Lisa Miller	NSW
Nerida Minett	NSW
Sarah Moan	NZ
Direshni Naidu	WA
Ngoh Ngoh Nestor	VIC
Shawn O'Leary	NZ
Narelle Oliver	WA
Steven Parker-Hill	VIC

Wayne Pitcher	NZ
Carly Porter	NSW
Kimberley Prince	QLD
Stephen Race	NSW
Emily Reed	VIC
Nicole Reid	QLD
Adam Reinhard	VIC
Tyrone Riley	NZ
Stephen Risson	QLD
Shelia Ryan	QLD
Shyama Sadanandan	WA
Tasma Scott	WA
Christine Shaw	NZ
Sumi Shrestha	NZ
David Taylor	ACT
Christopher Thomas	QLD
Nicole Threlfo	NSW
Pia Tunbridge	NZ
Cheryl Urek	SA
Kimara Wallace	VIC
Zhi Hui Wang	VIC
Juliet Watson	NZ
Alan Williams	VIC
Christine Wong	NSW
Amanda Wright	NZ

#### Trainee Members

Grazyna Imielska	NSW
Nelli Nedeva	NZ



**JUNE 2002**
**Full Members**

Lynette Arnesen	QLD
Zeljko Boksic	NSW
Mary Carmody	VIC
Ann Carr	SA
Ann Enns	QLD
Scot Fullston	NT
Alison Galpin	NSW
Maisie Gong	NSW
Lisa Hui	NSW
Davy Kou	NSW
Paul Lau	VIC
Sinh Le	QLD
David Mitchell	QLD
Florence Miu	NSW
Tuyet Nong	SA
Grant Rees	NZ

Peter Sylow	NSW
Susan Tomarchio	QLD
Matthew Vogels	QLD
Rosemary White	QLD

**Associate Members**

Madeleine Alston	VIC
Jane Best	VIC
Susan Bolton	QLD
Gregory Chiavaroli	VIC
Joanne Cleary	VIC
Renae Edser	QLD
Kylie Elmore	QLD
Judith Errey	WA
Ann Garton	NZ
Emma Graham	QLD
Jamie Jackson	NSW

Thayalini Kesavan	NSW
Linda Lott	NZ
Anatoly Margovsky	NSW
Marie McDonnell	NSW
Tam Nguyen	QLD
Peter Nowill	QLD
Jodie Sibley	QLD
Jennifer Surdy	VIC
Amelia Tonta	VIC
Derrek Toussaint	QLD
Gillian Whalley	NZ
Renee Wight	NSW
Christopher Worne	NSW

**Trainee Members**

Raffi Qasabian	NSW
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**JULY 2002**
**Full Members**

Lisa Kench	NSW
Aziz Khan	NSW
Sarah-Jane Langford	NSW
Vimal Nelson	NSW
Scott McLennan	QLD
Austin Kent	VIC

Arlene Joyce	VIC
Alek Yee	VIC

**Associate Members**

Mandy Luong	NSW
Sharon Williams	NSW
Matthew Ischenko	QLD
Tory Stevens	SA

**Medical Correspondence**

Asma Javed	PAKISTAN
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**Trainee Members**

Alexis Shub	QLD
Nagush Naik Gaunekar	SA

**AUGUST 2002**
**Full Members**

Carlos Yudi	QLD
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**Associate Members**

Heather Armstrong	NZ
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**SEPTEMBER 2002**
**Full Members**

Paul Menssink	VIC
Kerri Stock	VIC

**Associate Members**

Joan Kevrekian	NSW
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## DDU 2003 examination dates and fees

### Part I Examination Fee

A\$990.00 (includes GST) for ASUM Members  
A\$1,254.00 (includes GST) for Non members

### Part II Examination Fee

A\$1,760.00 (includes GST) for ASUM Members  
A\$2,024.00 (includes GST) for Non members

### Part II Casebook Fee

A\$330.00 (includes GST) for ASUM Members

Fees quoted above are from 1 July 2002 and may be subject to change.

**PLEASE NOTE THE FOLLOWING INFORMATION PERTAINING TO THE NEXT DDU EXAMINATIONS**

### 2003 Part I

Part I written examination will be held on Monday 19 May 2003

\* Closing date for applications Monday 24 March 2003

### 2003 Part II

Casebooks for 2003 Part II DDU Examination must be submitted by Monday 20 January 2003 and accompanied by the prescribed fee of A\$330.00 for all participants.

Part II written examination will be held on Monday 19 May 2003

\* Closing date for applications Monday 24 March 2003

Part II oral examination will be held on Saturday 14 June 2003 in Sydney, (except Cardiac candidates, who will be examined in Melbourne on a date yet to be determined).

**NB** Applications received after the closing dates will not be accepted. It is advised all applicants read through the DDU handbook. For the latest copy and an application form, please download from our website [www.asum.com.au](http://www.asum.com.au) or contact ASUM on Tel (61 2) 9958 7655.

## Sonographer/Radiographer

We currently have several positions for qualified Sonographers and Radiographers. Our clients are large private practices, public and private hospitals. Sonographers are required to have general sonography experience, with experience in Muscular and Vascular desirable. Radiographers must have experience in general radiography with CT and MRI experience highly regarded. Top \$\$\$\$ remunerations and career opportunities will be offered to the successful candidates. Positions are available in Sydney and across AUS. All enquiries will be treated with absolute confidentiality. Please call Girlie Brotonel on 02 9386 0408 or 0421 116 856 after hours. Alternatively you may email at [girlie@medijobs.com](mailto:girlie@medijobs.com) or fax 02 9386 0031.

## DMU 2003 examination dates and fees

### EXAMINATION DATES

Closing date for Application for an Exemption Fri 21 Mar 2003

Closing date for Part I and Part II Application Wed 30 Apr 2003

Part I and Part II Written Examination Sat 19 Jul 2003

Part II Practical Examination Sept & Oct 2003

OSCE Examination:

Perth	Mon 8 Sept 2003
Sydney	Sat 20 Sept 2003
Auckland	Sat 27 Sept 2003
Brisbane	Sat 4 Oct 2003
Melbourne	Sat 4 Oct 2003

Part I Statement of Attainment mailed out in November 2003.

Part II results mailed out in November 2003.

### TABLE OF CHARGES

#### ASUM MEMBER

##### Part I

A\$900.00 + \$90.00 GST\* = \$990.00 (Australia)

A\$900.00 (New Zealand and elsewhere)

##### Part II

A\$1600.00 + \$160.00 GST\* = \$1760.00 (Australia)

A\$1600.00 (New Zealand and elsewhere)

#### NON MEMBER

##### Part I

A\$1500.00 + \$150.00 GST\* = \$1650.00 (Australia)

A\$1500.00 (New Zealand and elsewhere)

##### Part II

A\$2100.00 + \$210.00 GST\* = \$2310.00 (Australia)

A\$2100.00 (New Zealand and elsewhere)

**Fees also apply for:** Applications for Exemption  
Applications for Waiver  
Request for Essay Remark

*\*GST applies to candidates presenting for examination in Australia only*



## SOUTH WESTERN SYDNEY AREA HEALTH SERVICE

Please visit the Area's Web Page [www.swsahs.nsw.gov.au](http://www.swsahs.nsw.gov.au)

A commitment to ethical practices is an essential requirement for all positions. Fluency in a community language, other than English, is a desirable criterion for relevant positions. Please ensure that application addresses the essential and desirable criteria of the advertisement and includes the names of three (3) referees.

### LIVERPOOL HEALTH SERVICE

## VASCULAR TECHNOLOGIST (MRS LEVEL 4)

An experienced Vascular Technologist/Sonographer is required to join our team at the Vascular Diagnostic Department, a busy tertiary level diagnostic unit utilising state of the art equipment. The service is under the clinical direction of a Vascular Surgeon & sees a full range of vascular pathology & trauma. The unit also acts as a resource centre, participation in research & ongoing education is encouraged. Currently no out of hours/weekend work.

**Essential:** Diploma in Medical Ultrasonography/Postgraduate Diploma in Ultrasonography or Registered Vascular Technologist or equivalent or progress towards; effective verbal & written communication skills; excellent interpersonal & time management skills; ability to work unsupervised within a multidisciplinary team; commitment to professional & personal development; understanding of and willingness to be involved in QI activities; understanding of the principles of OH&S.

**Desirable:** Experience in vascular sonography & technology/non-invasive vascular diagnostic environment; computer literacy; ability to conduct research.

**Enquiries:** Dr John Crozier 02 9626 4310. **Ad No:** LS.026/1

Applications quoting Ad No. to: Employee Services Manager, Liverpool Health Service, Locked Bag 7169, Liverpool BC NSW 1871. Or email the Recruitment Officer: [philomena.karman@swsahs.nsw.gov.au](mailto:philomena.karman@swsahs.nsw.gov.au)

T-02/02/02

Relevant criminal record checks will be required before appointment to all positions.



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As a Field Applications Specialist, you will be the critical link between Siemens Ultrasound and its customers throughout Asia Pacific. Using your clinical skills, you will demonstrate the superior image quality and versatility of the Acuson & Sonoline family of products. You will also provide in-service training and education to our customers (both external and internal) and represent the company at major conferences and exhibitions.

To qualify, you should have at least five years experience in ultrasound scanning, preferably on Acuson & Siemens equipment, and be qualified to DMU II or equivalent standard in Radiology & preferably Cardiology as well. The successful candidate will possess strong interpersonal skills, and be willing to travel extensively throughout Asia Pacific.

The successful candidate will be Singapore based and be working as part of Siemens Ultrasound regional team supporting Asia Pacific.

Siemens Ultrasound offers a most professional environment and outstanding company paid benefits. For immediate consideration, please send your resume to:

**Mr Andrew Hartmann**  
VP of Sales Asia Pacific  
Locked Bag 2500  
North Ryde NSW 2113  
Email: [Kelly.Foster@siemens.com.au](mailto:Kelly.Foster@siemens.com.au)  
Closing Date: 2 December, 2002



Monash offers its  
**ultrasound** students

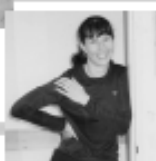


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**T**he Monash University Graduate Diploma is the newest alternative in courses offering an ASAR accredited ultrasound qualification. Written by clinical specialists from the field, the course has eight clinically oriented study units which cover the full range of ultrasound examinations. Each unit has weekly study topics which systematically lead the student through the material. Integrated into the content are exercises, small activities and reflections which challenge the student to apply their new theoretical knowledge into their clinical environment.

**assisted learning**

**S**tudents are supported in their learning by experienced sonographers who manage the course. The student's clinical supervisor is encouraged to be involved in the learning activities and assessment. Students have daily access to tutors and other students via the internet over the Monash portal system. There is also opportunity to attend optional workshops to supplement the comprehensive off campus study materials. Clinical visits are organised to discuss student progress and plan the next stages of their study.

For more information:

Peter Coombs (03) 9905 1348 [Peter.Coombs@med.monash.edu.au](mailto:Peter.Coombs@med.monash.edu.au)  
Tania Griffiths (03) 9905 2370 [Tania.Griffiths@med.monash.edu.au](mailto:Tania.Griffiths@med.monash.edu.au)  
<http://www.med.monash.edu.au/BRadMedImag/courses/SON3402/>

## PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS



**Secrets of Sound**

**10th Annual National Conference  
Australian Sonographers Assoc**

**Hilton Adelaide**

**Friday 30 May - Sunday 1 June**

**2003**

- **Registration Brochure available early December ...**
- **Make sure you have these dates in your diary!**
- **Why not consider presenting a paper or poster? Great prizes on offer.**

**Further information can be obtained from our website at:**

**[www.A-S-A.com.au](http://www.A-S-A.com.au)**

**or by contacting:**

**ASA Secretariat**

**PO Box 709 Cheltenham Vic 3192**

**Ph: +61 3 9585 2996**

**Fax: +61 3 9585 2331**

**Email: [enquiries@A-S-A.com.au](mailto:enquiries@A-S-A.com.au)**

# THE STAFF OF AUSTRALIAN INSTITUTE OF ULTRASOUND

WISH OUR COLLEAGUES A GOOD HOLIDAY BREAK AND  
A HAPPY AND SUCCESSFUL 2003

*COURSE DATES FOR NEXT YEAR ARE NOW SET, WITH SOME EXCITING NEW PROGRAMS.*

- ON-LINE LEARNING WILL BE AVAILABLE VERY SOON
- STUDY MODULES TO ASSIST SELF PACED LEARNING & REVIEW
- FASTTRACK ECHOCARDIOGRAPHY 23<sup>RD</sup> – 27<sup>TH</sup> JUNE 2003
- HIGHLY INTENSIVE, PERSONALISED ECHO TRAINING – SMALL STUDENT/TUTOR RATIOS
- FASTTRACK PROGRAMS THROUGHOUT THE YEAR
  - GENERAL
  - VASCULAR
  - OBS & GYNAE
- PERSONALISED PROGRAM MIXES

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**Contact Numbers**

Phone: (07) 55266655

Fax: (07) 55266041

Email: [sue@aiu.edu.au](mailto:sue@aiu.edu.au)

Program Information: Sue Davies

Registration Information: Sally Ashwin



You are invited to attend the  
**10th Congress of the  
World Federation for  
Ultrasound in Medicine  
and Biology (WFUMB)  
hosted by the  
American Institute of  
Ultrasound in Medicine  
(AIUM)**

**June 1-4, 2003  
Montréal, Canada**



- ◆ Learn from the best speakers on ultrasound from around the world
- ◆ Visit Montréal, Canada, and experience a city full of beauty and culture
- ◆ Choose from a variety of educational formats, including round table discussions, hot-topic debates, and film panels
- ◆ Experience an exhibit hall with the latest products and services for your profession
- ◆ Earn up to 39 AMA PRA Category 1 CME credits

## How to Register

To register or for information, visit <http://www.aium.org>.

To receive a copy of the Congress registration materials via mail, please contact ASUM.

Call +61 2 9958 7655

Email: [asum@asum.com.au](mailto:asum@asum.com.au)



See reverse for information about the WFUMB/AIUM Precongress Programs.

# Ultrasound Events

**Wed 11 Dec 2002 - 3 days** BMUS 34th Annual Scientific Meeting. *Venue:* Manchester International Conference Centre, England. *Contact:* 36 Portland Place, London W1B 1LS, UK; Ph: 44 0 20 7636 3714; Fax: 44 0 20 7323 2175; Email: [bmus2002@bmus.org](mailto:bmus2002@bmus.org); Website: [www.bmus.org](http://www.bmus.org)

**Wed 11 Dec 2002** ASUM WA Branch. Joint function with ASA: Christmas Meeting. *Contact:* Michelle Pedretti, Ph: 08 9400 9030, Email: [michelle.pedretti@maynegroup.com.au](mailto:michelle.pedretti@maynegroup.com.au) or [pedrets@aol.com](mailto:pedrets@aol.com)

**Wed 5 Feb 2003 - 6 months** ASUM Victorian Branch 2003 Ultrasound Lecture Series. Convenor: Dr Alex Taylor *Venue:* The Royal Melbourne Hospital, Melbourne. *Contact:* Merilyn Denning, Ph: 03 9242 8786; Fax: 03 9342 8369

**Wed 12 Feb 2003 - 5 days** ASUM DMU Preparation Course. *Venue:* Sydney. *Contact:* ASUM, 2/181 High Street, Willoughby, NSW, 2068; Ph: 61 2 9958 7655; Fax: 61 2 9958 8002; Email: [asum@asum.com.au](mailto:asum@asum.com.au)

**Fri 21 Mar 2003** DMU Part I and II Application for Exemption closing date. *Contact:* James Hamilton, DMU Coordinator, Ph: 61 2 9958 0317; Fax: 61 2 9958 8002; Email: [dmu@asum.com.au](mailto:dmu@asum.com.au)

**Fri 21 Mar 2003 - 3 days** ASUM Multidisciplinary Workshop. *Venue:* Sydney. *Contact:* ASUM, 2/181 High Street, Willoughby, NSW, 2068; Ph: 61 2 9958 7655; Fax: 61 2 9958 8002; Email: [asum@asum.com.au](mailto:asum@asum.com.au)

**Sun 27 Apr 2003 - 5 days** 15th Congress EUROSON 2003 - Joint Scandinavian Meeting. *Venue:* Copenhagen, Denmark. Email: [euroson2003@ics.dk](mailto:euroson2003@ics.dk); Website: <http://www.euroson2003.com>

**Wed 30 Apr 2003** DMU Part I and II Examination Applications closing date. *Contact:* James Hamilton, DMU Coordinator, Ph: 61 2 9958 0317; Fax: 61 2 9958 8002; Email: [dmu@asum.com.au](mailto:dmu@asum.com.au)

**Sat 24 May 2003 - 2 days** ASUM DMU Technical Seminar. *Venue:* Sydney *Contact:* ASUM, 2/181 High Street, Willoughby

NSW 2068. Ph: 61 2 9958 7655; Fax: 61 2 9958 8002; Email: [asum@asum.com.au](mailto:asum@asum.com.au)

**Fri 30 May 2003 - 3 days** Australian Sonographers Associations 10th Annual Conference. *Venue:* Hilton Hotel, Adelaide. *Contact:* Elaine Trevaskis, Ph: 03 9585 2996

**Sun 1 Jun 2003 - 4 days** AIUM hosting the 10th Triennial World Congress of the World Fed For Ultrasound in Medicine and Biology. *Venue:* Montreal, Quebec, Canada. *Contact:* Brenda Kinney, AIUM, Ph: 1-301-498-4100; E-mail: [bkkinney@aium.org](mailto:bkkinney@aium.org); Website: [www.aium.org](http://www.aium.org)

**Sat 19 Jul 2003** DMU Part I and II Written Examination. *Contact:* James Hamilton, DMU Coordinator, Ph: 61 2 9958 0317; Fax: 61 2 9958 8002; Email: [dmu@asum.com.au](mailto:dmu@asum.com.au)

**Sun 31 Aug 2003 - 4 days** 13th World Congress on Ultrasound in Obstetrics and Gynecology. *Venue:* Paris, France. Email: [isuog@concorde-uk.com](mailto:isuog@concorde-uk.com); Website: <http://www.isuog2003.com>

**Thu 4 Sep 2003 - 4 days** ASUM 2003. 33rd Annual Scientific Meeting of the Australasian Society for Ultrasound in Medicine. *Venue:* Burswood International Resort, Perth, Western Australia. *Contact:* ASUM, 2/181 High Street, Willoughby, NSW, 2068. Ph: 61 2 9958 7655; Fax: 61 2 9958 8002; Email: [asum@asum.com.au](mailto:asum@asum.com.au)

**Fri 10 Oct 2003 - 6 days** Australian and New Zealand Society of Vascular Surgery: Vascular 2003. *Venue:* Hotel Sofitel Melbourne. *Contact:* Waldren Smith Management Conference Organisers, Ph: 03 9645 6311, Fax: 03 9645 6322, Email: [info@wsm.com.au](mailto:info@wsm.com.au)

**Thu 16 Oct 2003 - 4 days** Society of Diagnostic Medical Sonography 20th Annual Conference. *Venue:* Dallas, Texas. Ph: 800 229-9506; Email: [meetings@sdms.org](mailto:meetings@sdms.org)

**Thu 6 Nov 2003 - 2 days** ASUM and the Medical Ultrasound Society of Thailand (MUST) Asia Link Ultrasound Meeting. *Venue:* Bangkok, Thailand. *Contact:* Dr Caroline Hong, ASUM CEO, Email: [carolinehong@asum.com.au](mailto:carolinehong@asum.com.au)

## WFUMB 2003

ASUM is honoured to announce that the World Federation for Ultrasound in Medicine and Biology (WFUMB) has invited three speakers from ASUM to its 10th Congress to be held in Montreal, Canada from 1 to 4 June 2003 (WFUMB 2003). The invited speakers are:

1. Dr Stan Barnett
2. Dr Andrew Ngu - "ASUM and the Asia Link Program"
3. Mrs Kaye Griffiths AM - "Vascular reactivity in the early detection of atherosclerosis"

## ASUM Delegation to WFUMB 2003 Congress in Montreal, Canada

ASUM, in its bid to host the WFUMB World congress in Sydney in 2009, is preparing to send a delegation of representatives to attend the WFUMB 2003 Congress in Montreal, Canada from 1 to 4 June 2003.

ASUM members who are planning to register at this World congress in Montreal are advised to also let the ASUM CEO because the ASUM Executive will be delighted to meet ASUM members attending the Congress in Montreal. Email [carolinehong@asum.com.au](mailto:carolinehong@asum.com.au).

## Councillors 2002-2003

### Medical/Scientific Councillors

Dr Matthew Andrews  
Dr Stan Barnett (Immediate Past President)  
Dr Dave Carpenter (Honorary Treasurer)  
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Mr Stephen Bird  
Ms Kaye Griffiths AM  
Ms Janine Horton  
Ms Roslyn Savage (Honorary Secretary)  
Ms Vicki Truelove

## Executive Committee 2002-2003

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Immediate Past President	Dr Stan Barnett
Honorary Secretary	Ms Roslyn Savage
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Mr Tim Brown (Assistant Education Officer)  
Ms Marie Cawood (Registrar and DDU Coordinator)  
Mr James Hamilton (DMU Coordinator)  
Mr Keith Henderson (Education Officer)  
Mrs Iris Hui (Executive Assistant to CEO)

## Corporate Members

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**Agfa-Gevaert Ltd** (*Scopix, Matrix Images, Digital Memories*)  
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**Aloka/SonoSite** (*InSight Oceania*)  
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**Bristol-Myers Squibb Medical Imaging** (*Ultrasound Contrast & Nuclear Imaging Agents*)  
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**Excelray Australia Pty Ltd** (*Medical Imaging Solutions*)  
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**Mayne Health** (*Comprehensive Health*)  
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Claire Johnston 03 9781 5001

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Don Hardman 02 9937 1074

**Schering Pty Ltd** (*Ethical Pharmaceuticals*)  
Philip Owens 02 9317 8666

**Toshiba (Aust) P/L Medical Division** (*Toshiba*)  
Angela Doubleday 02 9887 8025



*Merry Christmas and a  
Happy New Year*

*ASUM Office will close over Christmas and New Year from Monday 23 December 2002 and reopen on Monday 6 January 2003. We would like to take this opportunity to wish all our members a safe and happy Christmas and a joyful New Year.*



# Guidelines for authors

Authors are invited to submit papers for publication in the following categories. Final responsibility for accepting a paper lies with the Editor, and the right is reserved to introduce changes necessary to ensure conformity with the editorial standards of the *Ultrasound Bulletin*.

## ORIGINAL RESEARCH

Manuscripts will be subject to expert referee prior to acceptance for publication. Manuscripts will be accepted on the understanding that they are contributed solely to the *Ultrasound Bulletin*.

## QUIZ CASES

A case study presented as a quiz, involving no more than three or four images and a paragraph briefly summarising the clinical history as it was known at the time. It will pose two or three questions, and a short explanation.

## CASE REPORTS

Case reports are more substantial presentations resembling short scientific papers which illustrate new information, or a new or important aspect of established knowledge.

## REVIEW ARTICLES

Review articles are original papers, or articles reviewing significant areas in ultrasound and will normally be illustrated with relevant images and line drawings. Feature articles are commissioned by the Editor who will indicate the size and scope of the article.

## FORUM ARTICLES

Members are invited to contribute short articles expressing their observations, opinions and ideas. Forum articles should not normally exceed 1000 words in length. They will not be refereed but will be subject to editorial approval.

## CALENDAR ITEMS

Organisers of meetings and educational events relevant to medical ultrasound are invited to submit details for publication in the *Ultrasound Bulletin*. Each listing must contain: activity title, dates, venue, organising body and contact details including name, address, phone number, facsimile number (where available) and email address (where available). Notices will not usually be accepted for courses run by commercial organisations.

## CORPORATE NEWS

Corporate members are invited to publish news about the company, including structural changes, staff movements and product developments. Each corporate member may submit one article of about 200 words annually. Logos, illustrations and tables cannot be published in this section.

## FORMAT

### Manuscripts

**Manuscripts should be submitted in triplicate in print and on PC formatted diskette as MS Word documents.**

- Font size: maximum 12, minimum 10
- Double spacing for all pages
- Each manuscript should have the following components:

Title page, abstract, text, references, tables, legends for illustrations.

- Title Page should include the following:
  - Title of manuscript, the full names of the authors listed in order of their contribution to the work, the department or practice from which the work originated, and their position.
  - Corresponding author's name, contact address, contact telephone number and facsimile number (where available) for correspondence.
- Abbreviations may be used after being first written in full with abbreviation in parentheses.
- Relevant references should be cited using the Vancouver style, numbered according to the sequence of citation in the text, and listed in numerical order in the bibliography.

**Vancouver style format should be used.**

Examples of Vancouver style:

1. In-text citation: Superscript
2. Journal article: Britten J, Golding RH, Cooperberg PL. Sludge balls to gall stones. *J Ultrasound Med* 1984;3:81-84
3. Book: Strunk W Jr, White EB. The elements of style. (3rd ed.) New York: Macmillan, 1979
4. Book section: Kriegshauser JS, Carroll BA. The urinary tract. In: Rumack CM, Wilson SR, Charboneau JW, eds. *Diagnostic Ultrasound*. St Louis, 1991:209-260

## Abstract

All manuscripts for Feature Articles and Original Research must include an abstract not exceeding 200 words, which describes the scope, major findings and principal conclusions. The abstract should be meaningful without reference to the main text.

## Images

Images may be submitted as hard copy (in triplicate) or in digital format. All images sent must have all personal and hospital or practice identifiers removed. Please do not embed images in text. Separate images are required for publication purposes. Figure legends must be provided for the images. Hard copy images should be presented as glossy print or original film. Any labelling should be entered on the front of the glossy print using removable labels (eg Letraset). (Please send one copy of illustrations without labelling as this can be added electronically prior to publication.) On the back of the print include the author's name, figure number and a directional arrow indicating the top of the print. Digitised graphics should be supplied on PC formatted 3.5" diskette, ZIP disk or CD, which must be clearly labelled with the author's name and the names of the image files. JPG or TIFF files are preferred.

## COPYRIGHT

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