ABSTRACT

Poster Presentations

P001  |  A curious case of liver abscess

Mrs Haidee Janetzki1
1Queensland Health, Toowoomba, Australia

Introduction: Sonographic detection of a liver abscess is rare in western society. The leading cause of liver abscess is amoebic. In Australia, the more common form of liver abscess is pyogenic. Presented here is a case of liver abscess in an otherwise healthy pregnant woman.

Methods: A 40-year-old lady presented to the emergency department Sunday morning with abdominal pain from right upper quadrant and across her pelvis. She was 37 weeks pregnant and the cervix was not open. An emergency caesarean section was ordered. Steps were taken to empty the bowels, but the pain persisted.

On day 4 post-delivery, she presented to the emergency department still in pain and with elevated c-reactive protein (CRP). The ultrasound discovered an abscess arising from the capsule of the liver tip of segment VI.

Results: On CT, it was discovered that the abscess was in fact arising from a ruptured retrocaecal appendix. The caecum and appendix were in the right upper quadrant. A faecolith was present within the abscess and the abscess was approximately 200ml.

Conclusion: This case demonstrates that subhepatic abscess is still to be found in the western world and can be caused by a ruptured appendix.

Take home message: If a liver abscess is present, check the appendix.

P002  |  A vascular leiomyosarcoma – a rare and aggressive tumour of the soft tissues

Miss Kyra Mamgelakis

Introduction: A leiomyosarcoma is a rare cancerous soft tissue tumour originating in smooth muscle cells. Leiomyosarcomas can arise from a diverse range of anatomical locations and can be subclassed into four categories according to their origin including intraabdominal, subcutaneous, cutaneous and vascular. Leiomyosarcomas from a vascular origin are the least common, accounting for approximately only 5% of cases. In general, leiomyosarcomas are notorious for the metastatic potential, aggressive nature and poor prognosis.

Case presentation: A 57-year-old female presented for an ultrasound investigation of a growing palpable, hard mass within her left proximal medial thigh. The ultrasound revealed the mass correlated to a large, complex mixed cystic/solid vascular mass which appeared to involve the proximal long saphenous vein. Further investigation concluded that the mass was a leiomyosarcoma arising from the wall of the long saphenous vein. Despite surgery and chemotherapy the tumour eventually metastasised to the lungs.

Conclusion: These tumours are technically difficult to differentiate with medical imaging as they can resemble venous thrombosis when very small. It is important that a patient history and relevant clinical information is obtained. If the venous thrombosis is not resolving with anticoagulant therapy a more sinister underlying process should be taken into consideration.

Take home message: Leiomyosarcomas are aggressive tumours and because time sensitive, a diagnosis sooner rather than later is imperative to the final patient outcome.

P003  |  Acute and severe calcific tendinopathy of the shoulder, and the role of barbotage

Noni Collins

Introduction: Acute calcific tendinopathy of the shoulder is often very painful and with limitation in range of movement, due to the deposition of calcific deposits within or outside the rotator cuff tendons. Although conservative management allows resolution of symptoms over time however barbotage performed under ultrasound guidance may provide instant relief and restoration of function. We discuss the clinical and imaging appearance of acute calcific tendinopathy. During the acute resorptive phase, the calcific deposition is often not clearly delineated and can be missed. We illustrate the technique of barbotage with lavage and deposit outflow.

Method: Case reports and pictorial review.

Results: 62 year old female presented with acute on chronic calcific tendinopathy / bursitis. Conservative management ensued. The imaging findings correlated to clinical findings suggest recent spontaneous release of the calcific deposit. Multiple imaging showed stages of calcific tendonitis. 39 year old female first presentation of acute calcific tendinopathy. Barbotage within 24 hrs of scan resulted in removal of calcific deposit. The patient had a complete relief of pain and recovery of range of movement.

Conclusion: The absorptive phase of calcific tendinopathy should be a differential diagnosis of a patient presenting with severe acute shoulder pain.

Take home message: The role of the sonographer is to recognise appearance, understand disease process and the role of barbotage in managing this condition, particularly in the acute setting.

Editorial material and organization © 2021 Australasian Sonographers Association. Copyright of individual abstracts remains with the authors.
P004  |  Audit and peer review in ultrasound: A potential support for quality sonographic practice?

Ms Nicole Chamberlain¹, Mrs Sarah Lewis¹, Mrs Jillian Clarke¹

¹Faculty of Medicine and Health, The University of Sydney, Sydney, Australia

Introduction: Rigorous assessment processes ensure Australian sonographers are competent at entry level, but ongoing capability is more difficult to ascertain. Audit and review processes have potential to measure continuing sonographer capability. With increasing advocacy for sonographers to be regulated for patient safety, we investigated the literature around audit and peer review processes for sonographers.

Methods: An extensive review of relevant research and pertinent websites of ultrasound governing bodies and societies was conducted to identify existing policies and protocols for performing audit and peer review.

Results: The Australasian Sonographers Association (ASA), New Zealand Medical Radiation Technologist Board (NZMRTB) and Australasian Society for Ultrasound in Medicine (ASUM) all indicate CPD as a means of maintaining high levels of competence, and the necessity of undertaking clinical and self-review audit processes. The literature has highlighted the paucity of viable methods which have been investigated and employed for sonographers, particularly in Australia. While retrospective evaluation (e.g., discrepancies between images and reports/worksheets, protocol adherence, image quality and reflective practice) are potential means of assessing and measuring competency, there is limited research into peer and collaborative review for sonographers. The literature shows that there is a beneficial role for audit, however positive sonographer engagement is required, and it can be time and resource intensive.

Conclusion: Efficient audit and peer review processes that are acceptable to sonographers are needed to ensure ongoing sonographer competency and patient safety.

Take home message: Regular audit and review procedures could support existing CPD programs, quality assurance, and the promotion of sonographer regulation.

---

P005  |  Early trimester morphology and screening

Mr Tuo Lin¹

¹Keystone Radiology - High St Xray, Bendigo, Australia

Background: Obstetric screening tests have played significant and effective role on detecting fetal chromosomal anomalies and fetal defects. With advanced ultrasound technologies, fetal anatomical assessment can be shifted towards early trimester. However, literatures and current practice have shown that some modifiable and nonmodifiable factors can affect the quality of fetal anatomical assessment and detection rate of structural anomalies. The purpose of this study is to educate and guide sonographers performing high quality fetal structural assessment.

Methods: Current guidelines and literatures on the fetal morphologic assessment during early trimester screening are reviewed. It will include areas within the first trimester screening scan, particularly current guidelines on fetal structural assessment, detection rate of fetal anatomical anomalies, factors influencing the fetal morphologic assessment, and optimising fetal structural assessment. It also correlated to current clinical practice on fetal structural assessment.

Results: According to recent guidelines and literatures, the early trimester fetal morphologic assessment could be effectively performed with a reasonable detection rate. The influencing factors and techniques applying to optimise the scan were reported.

Conclusion: The fetal structural evaluation can be achieved with effective optimising techniques and recommendation. The further research or study on performing fetal structural and screening at 13 week gestation is suggested.

Take home message: The project implemented the sonographer’s knowledge and skills on performing an optimal ultrasound fetal structural assessment during early trimester screening. It also provides a view to carry out a formal research on optimal time to perform the fetal structural evaluation during early trimester screening scan.

---

P006  |  Echocardiography in cardiac sarcoidosis – A multimodality approach

Mrs Stephanie Raphael¹, Ms Hayley Sadler², Mr Richard Allwood¹

¹Castlereagh Imaging, Sydney, Australia, ²Keystone Radiology - High St Xray, Bendigo, Australia

Introduction: A 46-year-old female presents with syncope, palpitations and an electrocardiogram showing sinus rhythm with ventricular bigeminy.

Methods: A transthoracic echocardiogram (TTE) was performed prompting further investigation with a coronary angiogram, cardiac magnetic resonance imaging (cMRI), chest computed tomography (CT) and an endomyocardial biopsy.

Results: The TTE demonstrated moderate segmental systolic dysfunction with an ejection fraction (EF) of 35-40%. The regional wall motion abnormalities were unusual with thinning and akinesis of the basal to mid anteroseptum, basal inferior, basal inferoseptum and apical inferoseptum. The coronary angiogram confirmed no coronary artery disease. The cMRI demonstrated left ventricular dysfunction and the late gadolinium enhancement (LGE) pattern suggested sarcoidosis. The endomyocardial biopsy revealed focal oedema and fibrosis with a lymphohistiocytic inflammatory infiltration. The CT excluded extra cardiac involvement suggestive of isolated cardiac sarcoidosis.

Conclusion: Diagnostic guidelines for cardiac sarcoidosis suggest a clinical diagnosis group or a histological diagnosis group. This case, with a negative endomyocardial biopsy met the criteria for a clinical diagnosis group using a multimodality approach. Echocardiography is essential for major criteria which include basal thinning of the LV sheet.
Evaluation of changes in work related musculoskeletal disease following participatory ergonomics interventions

Ms Kristie Sweeney, Prof Karen Ginn, Dr Jacqueline Spurway, Associate Professor Jillian Clarke, Associate Professor Martin Mackey

Introduction: Sonographers in the Western New South Wales Local Health District (WNSWLHD) reported a musculoskeletal pain prevalence rate of 95%. Participatory ergonomics, where workers are consulted about improving work conditions, was utilised to identify work related musculoskeletal disease (WMSD) risks and potential solutions. The aim of this study was to compare the prevalence of WMSD in a cohort of sonographers before and after implementation of ergonomic changes that were driven by recommendations from a participatory ergonomics approach.

Methods: This observational mixed methods study analysed the impact of ergonomic changes on musculoskeletal pain in a cohort of sonographers employed within the WNSWLHD. Consultation and implementation of the ergonomic changes were implemented over an 18 month period and pre and post musculoskeletal pain surveys were completed by ten sonographers.

Results: The following interventions were perceived responsible for decreasing musculoskeletal pain: installation of patient monitors, use of ergonomic scanning techniques and job rotation. Several sonographers believed an increase in the number of obese patients being scanned was responsible for increasing pain levels. Immobile patients, obstetric scans, performing mobile scans and increasing workload were also flagged as perceived risk factors for increased pain levels despite implementing ergonomic interventions in the workplace. No interventions were believed responsible for increased pain.

Conclusion/Take home message: Evidence from this small study indicates that participatory ergonomics resulted in the identification of specific risks for WMSD in each sonography department in the WNSWLHD, allowing ergonomic changes to be tailored to the workplace, resulting in a safer environment for sonographers.

Take home messages: The diagnostic guidelines for Cardiac sarcoidosis include histological or clinical diagnosis groups.
- Echocardiography is essential in the clinical diagnosis and is used to identify two of the five major criteria for determining cardiac involvement.
- A negative myocardial biopsy does not exclude cardiac sarcoidosis, a multimodality approach is necessary.

Grading fatty liver and detecting liver pathological features – Is there consensus between sonographers and radiologists?

Mr David Sheng-Liang Yang, Prof Michal Schneider, Dr Paul Lombardo

Introduction: Hepatic steatosis is the leading cause of chronic liver disease. Reliable detection and staging of liver disease using ultrasound is important to facilitate diagnosis and treatment. The aim of this study was to evaluate the interobserver agreement between trainee sonographers, qualified sonographers and radiologists in grading non-alcoholic fatty liver disease (NAFLD) and detecting common liver pathological features on B-mode images.

Methods: 150 B-mode liver ultrasound images from 50 adult patients referred for abdominal ultrasound were obtained retrospectively from a PACS system. The images were independently graded for the severity of hepatic steatosis (normal, mild, moderate or severe) and the detection of incidental findings, focal fatty sparing, liver surface irregularity and rounded liver edge (present or absent) by 17 qualified, six trainee sonographers and six radiologists. Fleiss’ kappa statistic was used to calculate interobserver agreement.

Results: The interobserver agreement rates among trainee sonographers for the detection of incidental findings, focal fatty sparing, liver surface irregularity and rounded liver edge were: \( \kappa = 0.243, 0.486, 0.155 \) and 0.079 respectively. Among qualified sonographers, the agreement rates were: \( \kappa = 0.323, 0.428, 0.167 \) and 0.152 respectively. Among radiologists, the agreement rates were: \( \kappa = 0.156, 0.266, 0.015 \) and 0.154 respectively.

Conclusion: Visual assessment of common liver pathology in B-mode imaging has low interobserver agreement among sonographers and radiologists, but excellent interrater reliability in grading NAFLD. The low agreement levels are likely caused by a lack of standardised assessment criteria.

Message: Development of standardised criteria for staging NAFLD and liver pathological features are recommended.
P010 | Incidental detection of juvenile polyposis syndrome with ultrasound

Mr Michael Malouf1, Mrs Nikki Gorham1, Dr Tristan Reddan1,2

Introduction: Juvenile polyposis syndrome (JPS) is an autosomal dominant condition where patients who have: more than five juvenile polyps in the colo-rectum; polyps throughout the gastrointestinal tract; or any number of polyps and a family history of the condition are considered to meet diagnostic criteria. While the majority of polyps are not malignant, patients are at an increased risk of developing adenocarcinoma, and annual screening via colonoscopy is indicated from diagnosis.

Methods: We describe the case of a nine-year-old boy who was having a routine surveillance ultrasound of their abdomen four years post Wilms tumour resection, in whom multiple polyps were incidentally identified in the colon.

Results: Ultrasound revealed intraluminal soft tissue masses throughout the colon with heterogeneous echotexture suggesting solid and cystic/necrotic components. These were further characterised for their relationship with the bowel wall and the presence of internal vascularity using Superb Microvascular Imaging (SMI). Colonoscopy was arranged and confirmed the presence of approximately 50 polyps confirming JPS. Written informed consent was obtained from the patient’s parent for publication of this case.

Conclusion: While not widely practised, sonography is capable of accurately identifying the presence of intestinal polyps. The presence of multiple polyps in children should raise the suspicion of JPS and appropriate follow-up and screening should be arranged.

Take-home Message: Ultrasound is capable of identifying intestinal polyps in children, sonographers should be aware of their potential appearance and the clinical implications of multiple polyps in children given the increased risk of carcinoma in the JPS population.

P011 | Evolution of the Ultrasound Transducer

Chris Jansen

Introduction: Ultrasound transducers are bidirectional devices capable of converting electrical pulses into transmitted ultrasound waves via the reverse piezoelectric effect, and then subsequently converting the returning ultrasound echo into electrical signals via the direct piezoelectric effect to create an image. The ultrasound transducer has evolved significantly since the phenomena behind the science was first discovered in 1880. Improvements in transducer technology and design have seen progression in imaging from A-mode, B-mode, to 3D and 4D imaging.

Methods: Historical and contemporary review of the construction and design of ultrasound transducers was undertaken. Capacitive micro-machined ultrasound transducers (CMUTs) are a revolutionary technology which utilises a change in capacitance to transmit and receive ultrasound waves. These transducers are constructed differently to traditional transducers and allow for larger bandwidths, high frequency operation and simpler electronic integration. Not only are CMUTs constructed differently, they also operate under different principles, which are described.

Results: Ultrasound transducers are continually undergoing advancement but the basic design has remained relatively consistent, until the fabrication of capacitive micro-machined ultrasound transducers.

Conclusion: The technology of ultrasound transducers is ever-evolving with new concepts arising often, the latest of which are capacitive micro-machined ultrasound transducers. With such vast improvements in recent years, one can only imagine what will be accomplished in diagnostic ultrasound in the future.

P012 | Maternal Fetal Medicine (MFM) referrals: How does sonography technique impact?

Mrs Jackie Saunders1, Ms Marilyn Zelesco1

1Fiona Stanley Hospital, Murdoch, Australia

Introduction: To support a large health area, Fiona Stanley Hospital provides a weekly visiting MFM specialist service. This service is focused on establishing an imaging guided diagnosis, with a subsequent patient management plan for potentially complex obstetric patients.

Method: A retrospective review of August 2020 – February 2021 revealed 128 episodes of care were recorded for patients presenting to the MFM. If the suspected abnormalities did not correlate with the MFM ultrasound findings, they were divided into technical, gestational age, or patient related factors. The review focused on assessing whether the clinical indication was confirmed, or altered, by a tertiary ultrasound.

Results: Discrepant findings were usually as a result of deficiencies in sonographer education.

Conclusion: The inconsistencies can be addressed by enhancing knowledge or technical skills of sonographers.

P013 | Paediatric hip ultrasound using the Graf method

Mr Greg O’Connor

Introduction: This presentation will review the latest technique for measuring the hip angles using the Graf technique.

Method: All key landmarks and sonographic anatomy of the paediatric hip will be covered including treatment pathways.

Results: Early diagnosis of hip dysplasia is essential for early intervention and best practice to avoid corrective surgery.

Take home message: Correct angle measurements in conjunction with the Graf chart will guide patient management if treatment is
required. Treatment should be started in the first week after birth if clinically indicated, then followed up by a hip ultrasound at 6wks of age (corrected).

P014  |  Pop goes the penis: A penile fracture review

Mrs Sasha Thomas

Introduction: Penile fractures occur when the erect penis is exposed to blunt trauma, commonly during traumatic coitus. The penile corpora which are thinned during engorgement “pop” under pressure. The case of a 37 year old male who presented with immediate pain, swelling and a bruise to the left side of the penis will be reviewed.

Methods: Penile ultrasound imaging performed as per department protocol using the Philips EP1A 5G with a linear e18-4MHz transducer. B-mode and colour Doppler imaging techniques used for optimal image resolution.

Results: Tunica albuginea of the left corpus cavernosum – defect seen at base of penis. Mixed echogenicity collection seen externally to the tunica albuginea, consistent with a haematoma appearance also noted. Further follow up with surgical notes revealed 2 areas of defect: ventral defects within the corpora bilaterally at the peno-scrotal junction.

Conclusions: While MRI remains the gold standard imaging tool for penile pathology, ultrasound proves to be more available, reliable and more cost and time effective. Prompt diagnosis of penile fractures and surgical repair are crucial to maximise patient outcomes. This is achieved by quality scanning techniques, optimised images and thorough clinical assessment.

Take Home Message: Penis fractures are not something scanned frequently in every day practice, however general knowledge of anatomy and scanning techniques are extremely important in aiding patient diagnosis and treatment.

P015  |  Reference guide to normal ultrasound fetal heart anatomy

Mrs Debbie Slade

1Hig, East Maitland, Australia

Introduction: The fetal heart is a complex and intricate structure and a thorough knowledge of anatomy is paramount in its assessment during the ultrasound examination. The production and use of a reference guide will assist the sonographer to differentiate between normal and abnormal anatomy and endeavour to aid in the detection of complicated pathology.

Method: The methodology consisted of a compilation of typical normal ultrasound images collected from late 2nd and early 3rd trimester scans. Anatomy was then identified and annotated. Images were documented.

Results: A poster was created consisting of multiple ultrasound images to be used as a reference.

Conclusion and “Take Home” message: Performing a fetal heart ultrasound can be a daunting task. Knowledge of the anatomy of the heart is integral and an anatomical reference suitable for use by all sonographers, from novice to expert, is essential.

P016  |  Sonographic measurement technique of the fetal cerebral lateral ventricles – An update

Miss Joyce Chen

1Monash Health, Clayton, Australia, 2Monash University, Clayton, Australia

Introduction: Ventriculomegaly (VM) is a common antenatal finding which prompts tertiary referral due to risk of associated abnormalities. Accurate measurement of the cerebral lateral ventricles (LV) with reproducible landmarks is important. There appears some inconsistency in the literature and in practise. The aim of this paper is to provide an overview of the literature of the technique for measuring LV size.

Method: An electronic search of three databases (Scopus, Ovid MEDLINE and Cochrane Library) was performed. The search incorporated the keywords: “ventriculomegaly”, “fetal”, “prenatal”, “lateral ventricle”, “ultrasound” and “measurement”. Results were limited to English and no restrictions on publication year was applied to examine how the measurement technique has evolved. All publication types were included as much of the discussion surrounding VM is in the form of editorials, opinion pieces and correspondence. References of relevant articles were also manually searched.

Results: Varied measurement techniques have been implemented in the literature. Currently, there are two quite differing methods for the far field measurement recommended by ISUOG (2020) and Guibaud (2009). These have the potential to provide different LV measurements. Insufficient attention has been placed on the near field LV.

Conclusion: Variations in measurement techniques have the potential to under or over measure the LV in the diagnosis of VM. Standardising the ventricular measurement technique is important for accurately identifying, grading, and monitoring VM.

Take home message: There is still conflicting information in the literature surrounding the techniques for measuring the LV.

P017  |  The impact of COVID-19 on failure rates of thyroid FNA's in a tertiary centre

Miss Usmi Chauhan

1Monash Health, Melbourne, Australia

Introduction: A non-diagnostic thyroid FNA is a common clinical challenge. Monash Health has a weekly thyroid FNA clinic that performs FNA’s with a radiology registrar and cytologist present on-site. The
role of the cytologist is to ensure that adequate sample has been obtained from each patient. If an inadequate sample is produced, the registrar performs additional passes to meet the sample requirements. This in turn mitigates the need for a repeat FNA, and thus reduces patient anxiety and the associated risks of an FNA. The COVID-19 pandemic introduced a number of challenges and subsequent changes to the FNA clinic. We aim to analyse the effects of these changes on the failure rate of thyroid FNAs.

Method: This was a retrospective cohort audit of 600 patients with thyroid nodules who underwent US-guided FNA between April 2018 to February 2021 and had a non-diagnostic result. The patients were divided into 6 groups, namely pre-COVID, first wave, closure of FNA clinic, clinic re-open at reduced capacity (2nd wave), clinic at full-capacity, cytology removed.

Results: The failure rate of thyroid FNA’s was 6.8% pre-COVID, 5.5% during the first wave, 0% when FNA clinic was closed, 5.6% when clinic re-open at reduced capacity, 3.2% when clinic was at full-capacity, 11.5% when was cytology removed.

Conclusion: The discontinuation of the on-site cytology service lead to the largest change in FNA failure rates of the thyroid clinic. The failure rate changed from 6.8% pre-COVID to 11.5% when cytology was removed (data collection is ongoing, final stats can be provided closer to publication date).

Take home message: The COVID-19 pandemic has impacted the care of patients undergoing FNA for thyroid nodules.

P019 | Twin Anaemia Polycythaemia Sequence (TAPS)

Dr Jacqueline Spurway1

1Orange Health Servicce, Orange, Australia

Introduction: Twin Anaemia Polycythaemia Sequence (TAPS) is slow, chronic fetofetal transfusion that can complicate monochorionic (MC) diamniotic (DA) twins. TAPS causes an intertwin haemoglobin difference with anaemia in the donor and polycythaemia in the recipient twin. TAPS occurs spontaneously in approximately 5% of MC twins and develops without signs of classic twin to twin transfusion syndrome (TTTS).

Methods: MCDA twins underwent fortnightly scans from 16 weeks gestational age (GA). The Leiden criteria were used for antenatal staging of TAPS.

Results: At 24 weeks GA Twin B developed a more echogenic and thicker placental portion. MCA PSV divergence peaked at 33 weeks GA with Twin A 0.63MoM and Twin B 1.4MoM, giving a difference of 0.77MoM. This difference did not meet Leiden criteria for TAPS, but recent research indicates that using an MCV PSV discordance greater than 0.5MoM would improve diagnosis of TAPS. At 34 weeks GA Twin A had diminished liver parenchymal echogenicity giving a “starry sky” pattern. Twin, live male infants were delivered by caesarian section at 36 weeks and 4 days. A postnatal haemoglobin difference greater than 80g/L confirmed TAPS.

Conclusion: This case study demonstrates changes in placental appearance, fetal liver echogenicity and diverging MCA PSV with advancing gestation age in a set of MCDA twins compromised by TAPS.

Take home message: TTTS is not the only complication of MC twins. Use sequential plotting of MCA PSV to identify divergence. Subtle changes in the placenta and fetal liver appearances support an antenatal diagnosis of TAPS.

P020 | Ultrasound of lower limb deep venous thrombosis: Is it worthwhile to go the extra mile?

Ms Pei Yuan Chang1, Ms Sihui Cai3, Ms Ai Linn Wong3, Ms Hui Ting Cheong2

1Singapore General Hospital, Singapore; Singapore

Introduction: Deep venous thrombosis (DVT) of the lower limb is a serious medical condition that is fatal due to pulmonary embolism. Ultrasound is used for early detection and characterisation of DVT, to facilitate timely
Ventricular standstill captured with echocardiography

Dr Paul Stoddley1, Associate Professor David Richards2

Introduction: A 50-year-old male with recent syncopal episodes was referred for cardiovascular review. No significant arrhythmia was recorded on the resting electrocardiogram (ECG) or 24-hour ambulatory ECG. Transthoracic echocardiography (TTE) was requested to exclude a significant structural abnormality.

Method: TTE with continuous ECG was performed by standard protocol. Findings included normal atrial and ventricular situs, normal biventricular function, concentric left ventricular hypertrophy and left atrial enlargement. A mildly stenotic (bicuspid) aortic valve and dilated ascending aorta were found - lesions most unlikely to cause syncope. Significantly, midway through the study, a 10-second period of ventricular standstill (VS) was captured: nine consecutive P waves occurred without ensuing QRS complexes.

Results: During the 10 seconds of VS, the patient experienced pre-syncpe. Additional images and measurements were acquired (with consent): no further arrhythmia occurred. Given the importance of the observation and symptoms, an electrophysiological study was performed the same day, and a dual-chamber pacemaker implanted.

Conclusion: VS is a rare and potentially fatal cardiac arrhythmia. During VS, atrial activity is normal, but ventricular activity and cardiac output are zero, so pre-syncpe and syncpe commonly result. The recording of arrhythmias, VS or other, can be elusive: in this case both resting and 24-hour ECG failed to identify an abnormality. Fortunately, VS was captured during TTE, the finding was reported, and a pacemaker implanted to prevent future VS.

Regulation of ultrasound practice – Australian sonographers’ perceptions.

Mr John McInerney
Monash University

Introduction: The primary aim of healthcare regulation is public protection. In Australia, regulation of sonographers is a key focus of ASA’s ongoing policy and advocacy work. However, little is known about sonographers’ attitudes towards regulation and their perceptions of its potential impact on their practice.

Method: Qualified sonographers were recruited online via the Australian Sonographer Accreditation Registry to take part in semi-structured, one-on-one interviews. Interviews were carried out face-to-face, by telephone or via online video conference. Interviews were transcribed and underwent thematic analysis.

Results: Thirty-four interviews were conducted between September 2019 and January 2020. Sonographers’ perspectives of regulation were varied and regulation was sometimes poorly understood. Most interviewees said that self-regulation was adequate in maintaining high standards of practice and that regulation, in any form, would not influence their own practice or professional behaviour. Sonographers felt that acceptable standards are not upheld by all sonographers and that current local practice norms are insufficient in setting and monitoring expectations for practice. Many felt that statutory regulation could standardise ultrasound practice to better protect patients. Some interviewees opposed statutory regulation believing it to be ineffective and time consuming in dealing with unprofessional practice.

Conclusion: Statutory regulation is a poorly understood concept in ultrasound. Sonographers consider it a mechanism to standardise practice in the interest of patient safety but support for it is not ubiquitous.

Take home message: For statutory regulation to fulfil its primary aim of protecting patients, practitioners need to be better informed about its role and function.

Classic sonographic signs and their potential pitfalls in the adult abdominal and pelvic ultrasonography

Miss Cherie Lee
Singapore General Hospital

ABSTRACT
**Introduction:** Ultrasonography (US) is a non-ionising, dynamic form of imaging used as a common first line investigation for the abdomen and pelvis. However, the main limitation of this modality is operator dependency. The ability of the sonographer to critically identify essential sonographic features in a time-effective and accurate manner determines the utility of the study. This can eventually influence patient outcomes. The aim of this exhibit is to familiarize ultrasound practitioners with classic sonographic imaging signs encountered in certain abdominal and pelvic conditions, such as yin-yang sign, pseudo-kidney sign, to name a few, and their clinical significance, as well as how they can be misdiagnosed.

**Materials and Methods:** We present a pictorial review of correctly and incorrectly identified classic sonographic signs in patients treated at the largest tertiary hospital in Singapore, correlated with Magnetic Resonance Imaging (MRI), Computed Tomography (CT), Contrast-Enhanced Ultrasound (CEUS) and histopathological results when available. We discuss the clinical significance of these signs and potential reasons behind imaging pitfalls.

**Results:** There are many classic sonographic signs related to abdominal and pelvic pathology but correctly identifying them can pose a challenge to the uninitiated.

**Conclusion:** Being aware of classic sonographic imaging signs and knowing how they can be misdiagnosed increases the diagnostic confidence of the operator and diagnostician. This increases the diagnostic performance of this investigation modality.

**Take home message:** Being aware of and understanding the merits of classic sonographic imaging scans will enhance ultrasound diagnostic performance.