EDITOR'S NOTES

Well, my friends, the dog days of summer are almost upon us. North Carolina schools are gearing up for another year of producing amazing new graduates, working sonographers are fiercely protecting their vacation days against ever-demanding patient schedules and NCUS board members are putting the finishing touches on the 2015/2016 symposium events.

By visiting the NCUS.org website, members can nominate next year's board members and sonographer excellence recipients, register for conferences, and find NCUS volunteer opportunities. I encourage you to keep in touch with us through the website and our Facebook page.

In this newsletter, we will hear from our president, Chris Mann and read an interview with the 2015 Sonographer Excellence Award recipient, Elizabeth Allison. The faculty at South Piedmont Community College are excited to tell you about two new programs they are offering. And finally, we have two case studies submitted by NCUS board member, Bridget Niemeyer and CFCC student, C. Adrienne Alexander that I am sure you will enjoy.

As always, I am available for newsletter submissions and suggestions at hudson.okeefe@yahoo.com or the NCUS.org Contact Us tab. I look forward to hearing from you as well as seeing you in Chapel Hill October 17th.

Be well and talk soon,
Hudson O'Keefe, BS, RDMS

President's Letter

Hello Everyone! I hope this newsletter finds you enjoying the warm summer weather. The Board of Directors met recently for one of our quarterly meetings and things are looking good for the upcoming meeting at the Friday Center in Chapel Hill on October 17th. We look forward to seeing you there AND be sure to bring a co-worker (or two)!!

As a reminder, the minutes from the Board meetings are available on our site. I want to encourage you to take a quick moment to read over them. You may find that you have some ideas about the society that you want to share, and the Board wants to hear from you!

On that same note, we are working on the Spring Symposium to be held at the Benton Center in Winston Salem. The success of our Symposiums falls mostly in the hands of the speakers we are able to enlist. As valuable members of our society, we listen to your comments on past speakers evaluations and try to re-enlist the ones you love!

Also, we are always looking for new speakers, with new material, to keep the variety of topics current. You may have heard or seen a great speaker somewhere else or know of someone who is a potential speaker for the NCUS meetings? Please send us their name and how to contact them… We will take care of the rest! After all, these meetings are for you, and aside from trying to find locations that appeal to most, the lecturers are the main attraction!

Have a safe and wonderful summer and I look forward to seeing you in Chapel Hill!

Respectfully,
Chris Mann RDCS, RCS, FASE
Mannc77@gmail.com

2015 SONOGRAPHER EXCELLENCE AWARD WINNER

Elizabeth Allison, RT, RDCS, RDMS is the North Carolina Ultrasound Society's 2015 Sonographer Excellence Award winner. The announcement was made at the Spring Symposium in Wilmington, NC in March. She is the Lead Echocardiographer of the Adult Congenital Cardiology Program at the Sanger Heart & Vascular Institute in Charlotte, NC.

We sat down with Elizabeth to learn more about her career and her thoughts on our challenging and ever-changing profession.

NCUS: Tell us, Elizabeth, why you chose sonography as a profession?
Elizabeth: I was in art school and had a weekend job developing x-ray film. The sonographer on call allowed me to watch her scan patients, and I thought it was the coolest thing I had ever seen.

NCUS: How did you learn sonography? What road did you take to get to where you are?
Elizabeth: I decided after my weekend job during art school that I wanted to go to ultrasound school. At that time, a two year degree in some form of allied health field was required first, so I went to radiologic technology school. After graduating from that program, I went to Maryland Institute of Ultrasound Technology School for a one year certificate program. It was an excellent program. We rotated at eight different hospitals in Baltimore. I have been very fortunate over the years to work with excellent physicians who have been interested in instructing me further and challenging me.

NCUS: In what specialties are you certified? What specialties do you practice? How long have you been certified?

Elizabeth: I am certified as a radiologic technologist (ARRT) and registered as a RDCS and RDMS. My sonography certifications are in Adult and Pediatric Echocardiography (which are what I mainly practice now), Fetal Echocardiography, Abdomen, OB/GYN and Neurosonography. I obtained my certifications from 1982 through 2010.

NCUS: What do you like most about the sonography profession?

Elizabeth: I love creating images and discovering thru those images what problems a patient may have.

NCUS: What do you like least about the sonography profession?

Elizabeth: The changes in health care that have forced us to be more numbers oriented than focused on patient care.

NCUS: What, if anything, encourages you about the direction sonography is heading as a profession?
Elizabeth: Sonography is a continued leader in the top ten professions for employment around the country.

NCUS: What would you want to tell new sonographers and sonography students to encourage them?
Elizabeth: Sonography is a very rewarding and challenging field that will intellectually stimulate you and provide a lot of interaction with patients, one on one. Take every advantage in school to scan as much as possible so that you are ready for employment after graduation.

NCUS: What value do you receive from professional organizations such as the North Carolina Ultrasound Society?
Organizations like NCUS provide support and information that allows me to make informed decisions, advance my knowledge base, and network with other sonographers.

Congratulations, Elizabeth, on being the NCUS 2015 SEA Winner and thank you for your time sharing your thoughts and allowing us to know you a little.

If you know an outstanding sonographer that is a NCUS member, nominate them for the 2016 SEA competition by sending in their name (and your name) via the NCUS.org main page under the Contact Us tab.

2015 FALL SYMPOSIUM

The North Carolina Ultrasound Society 2015 Fall Symposium will be held in Chapel Hill at the Friday Center (100 Friday Center Drive, Chapel Hill, NC 27599) on Saturday, October 17, 2015.

Visit NCUS.org in the coming weeks for registration and hotel information.

For CME opportunities, we have a fabulous lineup of speakers and, of course, vendors on hand to demonstrate the latest developments in sonographic technology. We look forward to seeing you there!

FETAL INTRACARDIAC TUMORS

-A Case Study by Bridget Niemeyer, BS, RDMS, NCUS BOD

Figure 1

Figure 2

Sonographic images of a 4-chamber view demonstrating multiple tumors within the fetal heart. Figure 1: Multiple echogenic masses are imaged within the ventricular chambers; Figure 2: Single tumor at the apical region on the fetal heart.

Indication: Patient had an initial ultrasound performed at 18 weeks gestational age (GA) and an isolated echogenic intracardiac foci (EIF) was noted; otherwise the sonogram was normal. A repeat sonogram was ordered to evaluate fetal growth at 32 weeks GA. A heart abnormality was detected on ultrasound at that time. A fetal echocardiogram was ordered to further evaluate the abnormal heart findings.

***Maternal/Familial History*:** 27 years old; Gravida 1 Para 0; Father of baby (FOB) has a history of seizures due to tuberous sclerosis

Sonographic Findings*:* Multiple echogenic masses were imaged within the ventricular chambers with the largest mass located at the apex. Cardiac rhythm was normal with FHR of 153 bpm. Fetal size is normal with an EFW of 48%. No evidence of hydrops detected.

Treatment/Antenatal Management*:* The patient was referred to Sanger Clinic in Charlotte for a fetal echocardiogram and post management evaluation by a pediatric cardiologist. Serial ultrasounds recommended to rule out hydrops and dysrhythmias. Delivery at a tertiary care center was recommended.

Other Diagnostic Methods: Fetal brain MRI and level II sonography are indicated to rule out lesions or abnormalities of the fetal kidneys and brain associated with tuberous sclerosis.

- Intracardic tumors are a rare finding in fetuses and most that occur prenatally are rhabdomyomas (60%-80%), especially when multiple tumors are seen. Most rhabdomyomas are discovered in the late second and third trimesters and there have been no reported cases before 22 weeks GA.
- There is a strong correlation of rhabdomyomas to tuberous sclerosis, an autosomal dominant disorder. A genetic consultation is indicated.
- If tuberous sclerosis is suspected, ultrasound should rule out associated lesions or abnormalities of the fetal kidneys and intracranial structures.
- The sonographic finding of hydrops and dysrhythmias may indicate a poor prognosis and are often associated with fetal demise.
- Most rhabdomyomas regress postnatally, although surgical removal may be necessary if tumors affect hemodynamic function and rhythm. Postoperatively, the prognosis is excellent.

References: Bianchi, D., Crombleholme, T., D'Alton, M, Maloe, F. (2010). *Fetology: Diagnosis and Management of the Fetal Patient. Intracardiac Tumors. 2 ed. (pgs. 402-408). McGraw Hill Professional.*

Education Updates

Our latest education news comes from South Piedmont Community College in Monroe, NC. SPCC's General Sonography program began in 2001 and has produced over 120 sonography professionals. 2015 marks the beginning of two exciting new programs for the institution: Advanced Cardiovascular and Musculoskeletal Sonography. Both programs offer opportunities to existing sonographers to further their careers and obtain additional professional certifications.

Both programs combine online learning with convenient lab times for the busy sonographer: evenings for the cardiovascular and weekends for the MSK. In addition, the MSK classes will be taught by Dr. Randy Moore, our workshop speaker from the 2015 breakout spring session.

For more information, visit SPCC.edu and reserve your place in the 2016 classes!

If you are an educator or alumni of a North Carolina school offering new programs, please let NCUS know so we can get the word out. Feel free to email me directly at hudson.okeefe@yahoo.com or through the NCUS.org Contact Us tab. We look forward to hearing what your institution is doing!

Polycystic Kidney Disease

-A Case Study by Cape Fear Community College Student
C. Adrienne Alexander

Autosomal Dominant Polycystic Kidney Disease affects one in 1,000 people world wide and accounts for 8-10% of patients that later require transplants and chronic dialysis. The following patient was aware of her disease from a previous CT. A retroperitoneal exam was ordered, taking pictures of both kidneys and the bladder. The female patient was 57 at the time of the exam.

Figure 1 is an image of the right kidney mid in a sagittal plane. Figure 2 is an image of the left kidney mid in a sagittal plane. Notice figures 1 & 2 show bilaterally enlarged kidneys covered with numerous cysts of various sizes. Which are characteristic of Polycystic Kidney Disease. Figure 3 is an image of the right kidney-mid in transverse. Figure 4 is an image of the medial left kidney in sagittal. Notice the color Doppler signals are splayed throughout the kidney sinus. Which could be a possible reason for development of hypertension.

Figure 1

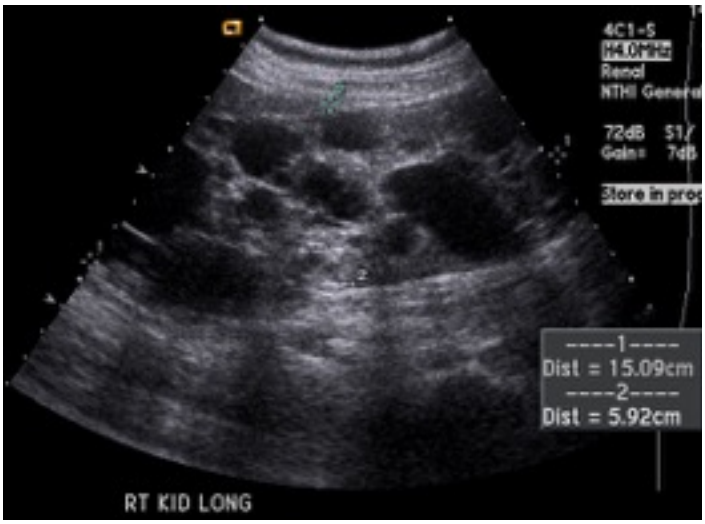

Figure 2

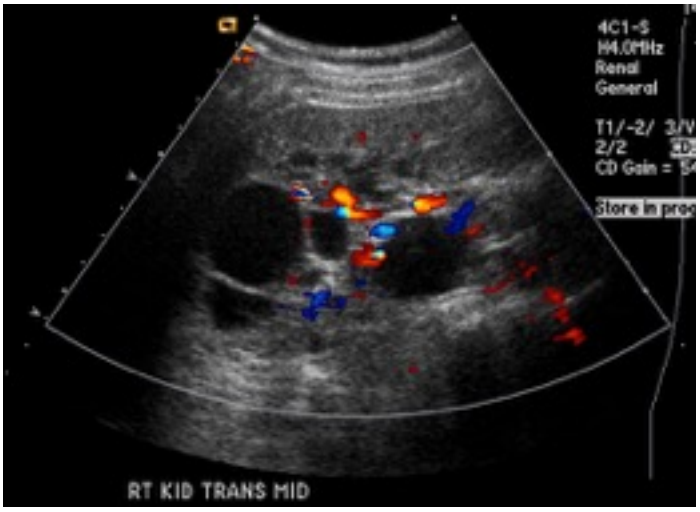

Figure 3

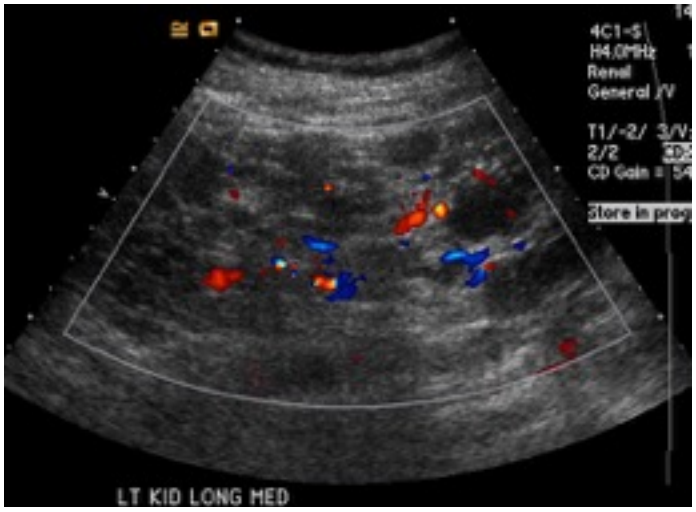

Figure 4

The sonographic characteristics of this disease are poorly defined renal contour that is secondary to multiple peripheral cysts. These cysts cause distortion and a decrease in specular reflections from the renal capsule (Kawamura & Lunsford, 2012). While scanning a patient with this known disease, close attention should be given to the liver, pancreas, and spleen because this is a multi-systemic and progressive disorder (Torra, 2014). Cyst formations can occur in these organs as well as the ovaries and testes.

Patients with this disease can be asymptomatic throughout their life until age 40 when symptoms most commonly can present. Some symptoms clinically presented are abdominal and lumbar pain, hematuria, and hypertension (brought on by the obstruction sometimes placed on the renal arteries from neighboring enlarged cysts). Deaths in these patients occur around ten years after the onset of symptoms (most commonly in their 70s) with the majority being uremia, or urea present in the patient's blood (59%) (Kawamura & Lunsford, 2012).

Treatments for the symptoms include blood pressure medicines, diuretics, and low-salt diet. Certain cysts that are painful, infected, bleeding, or obstructing may be drained. Ultimately the final stage for this disease is end-stage renal failure and a transplant may be necessary as long as the disease does not affect any other organs. (Healthline, 2015)

Some differential diagnoses for ADPKD are autosomal recessive polycystic kidney disease (which affects the neonatal/ childhood population), medullary cystic kidney disease (the renal cystic spaces are seen only in the deeper part of the kidney), acquired cystic kidney disease (family history would be used to differentiate these cases), and multiple simple renal cysts (which would most likely not involve other organs nor occur bilaterally).

References

1. *Kawamura, D., & Lunsford, B. (2012). The Kidneys. In Diagnostic Medical Sonography: Abdomen and Superficial Structures (3rd ed., pp. 289). Baltimore: Lippincott, Williams and Wilkins. Lusaya, MD, D. (2013, February 14).*
2. *Retrieved April 21, 2015, from http://emedicine.medscape.com/article/244907-overview. Roser Torra, MD, PhD. (2014, Apr 28).*
3. *Retrieved April 21, 2015, from http://www.healthline.com/health/polycystic-kidney-disease. Healthline Networks, Inc (2005-2015).*

CALL FOR CASE STUDIES

As working sonographers, some of the advice we try to pass on to students and new sonographers is the importance of continuing education and networking. We talk about attending conferences and reading journals but the case study is also an important tool to achieve both goals. With a case study, a student delves deeper into the images obtained and broadens their knowledge about anomalies and pathology. In addition, by writing a case study, they can showcase their ability to articulate and use critical thinking.

The NCUS newsletter is a great place for a student or new sonographer to begin their path to publishing. Through a case study submission, they are able to get their name out as another excited, ever-learning sonographer. If you are an educator, student case study submissions can highlight the exceptional skills you are passing on through your college's sonography program.

I encourage all of you to take advantage of the NCUS newsletter to spotlight your (or your students') case studies. Case studies can be submitted through the NCUS.org Contact Us tab or to me directly at hudson.okeefe@yahoo.com. We look forward to meeting you and learning from your experiences!

PARTING THOUGHT…