

CASE OF THE MONTH September 2022

Dr. Sean Muir BVSc (Hons), Post Grad Dip Medical Ultrasound Ultrasound Diagnostics Pty Ltd Consultancy Mobile Ultrasound service Tasmania Australia Lymphoma - the linear array (LA) compared to the micro-convex (CA)

Dr Sean Muir BVSc Hons (Melbourne University) Post Graduate Diploma Medical Ultrasound (Monash University) Ultrasound Diagnostics Pty Ltd - Mobile consultancy ultrasound / referral practice based in Tasmania, Australia

Presentation

13YO FN DLH presented with weight loss, anorexia, and lethargy. Bloods revealed a leukocytosis (51.4 x $10^9/L$), which comprised of lymphocytosis (15.9 x $10^9/L$), monocytes (1.0 x $10^9/L$) and other cells (29.8x $10^9/L$) Elevations in AST, ALKP, GGT and bilirubin were also noted

An abdominal ultrasound was performed, initially with a linear array probe (Mylab® Alpha with Esaote® SL2325 - operating frequency of 6 to 18MHz)

Kidneys, spleen, stomach, some loops of SI and liver appeared relatively unremarkable (see below)













A sample was taken from one of the jejunal LN

Histopatholgy:

Two smears display minimal blood contamination and excellent cellularity...The cellularity is comprised of relatively monomorphic sheets of round cells with larger round irregular nuclei with finely stippled chromatin and variable nucleoli and minimal blue cytoplasm. There are moderate numbers of scattered mitoses present.

Comments

The specimen appears to be consistent with inappropriate lack of differentiation resulting in the sheets of large lymphoid cells with relatively little differentiation to small lymphocytes and plasma cells. This is consistent with large cell high grade lymphosarcoma.

There were just a few points that I wanted to make (and others may think of more!)

- 1. Unquestionably the LA images are of higher quality, in part due to the higher frequency being used and in part by the lack of beam divergence that occurs with LA but is a by-product of creating a curved array.
- 2. The curved array being used (Esaote® MC 3-11MHz) gives outstanding images and, although some measurements are different, **both sets** of images are diagnostic
- 3. I always recommend to people that are starting ultrasound to start with a micro-convex probe (in medical ultrasound these are known as paediatric curved arrays) as it gives you high quality images across a greater size variation of patients. These days the broadband frequencies that are provided allow for even greater size variations to be covered
- 4. As people progress with their scanning, the linear array (LA) would be the next probe suggested, although I have arguments about whether a low frequency CA would be more versatile.