

Spring News

24/7
Pet
Emergency
Hospital



Welcome

Welcome to this edition of the Vets Now Manchester Newsletter!

In this quarter's newsletter we have an in-depth case study from our Diagnostic Imaging team, focusing on abdominal ultrasonographic examinations. We spend some time with Kat Alty, our ECC Team Leader, learning about her career. And, finally, we look at Wilson, a recent case we have seen at the hospital, whose journey saw him visit each of our disciplines.

We are very excited to let you know that our Full Day CPD is open for bookings NOW! We've got a great day planned to consist of five streams; clinical vets and nurses, non-clinical communication training, VPG's Pathology, and CPR. The link to book, and to all information including the full agenda can be found [here](#).

We recently held a CPR refresher event which was very successful, this highlighted the demand for in-house training; I am delighted to announce we will be re-introducing these sessions very soon.

If you use us for out-of-hours, you will shortly be receiving an online link to update your opening hours and contact details. Please ensure this is completed, it means we can advise your clients with the most up to date information.

As always, if you require anything from us, please do get in touch.



Amy P. Reed Msc
Deputy Hospital
Manager



Above: CPR
refresher event

Save the date!

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vets, nurses and practice managers

20th June 2024
Mercure Georgian Bolton

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and to reserve your place!



Discipline focus

Emergency and Critical Care:

Diagnostic Imaging



Our diagnostic Imaging team in Manchester provides service to our referral disciplines; emergency and critical care, internal medicine and surgery - as well as the out-of-hours hospital service, cooperating in the diagnostic investigations performed for our patients.

The various imaging modalities available at our Manchester hospital include radiography, ultrasonography, computed tomography (CT) and fluoroscopy, which can be used according to each case's needs.

For this month's newsletter we highlight ultrasonography as one of the most versatile modalities we have at our disposal by presenting an interesting example of the usefulness of the abdominal ultrasonographic examination.

An unassuming presentation

Here we describe the case of a two-year-old male entire Gordon Setter referred to our emergency and critical care (ECC) service with a five-day history of vomiting. The patient had no reduction in appetite and was passing normal faeces. According to the owners, no particular event correlated to the onset of the clinical signs. Supportive treatment at the primary care practice had been unsuccessful in the complete resolution of symptoms.

The patient was lethargic and mildly tachycardic at 132 beats per minute. A very mild tachypnoea was noted at 32 breaths per minute. The remainder of the physical exam was normal.

Our ECC team performed initial bloodwork which revealed moderate neutrophilia and a mildly increased serum alanine aminotransferase (ALT) level. Suspecting an inflammatory process involving the liver or the gastrointestinal tract, abdominal ultrasonography was deemed the most appropriate imaging modality to include in the early diagnostic plan.

An unexpected finding...

An acoustic shadowing long linear bright structure compatible with a foreign body was detected on ultrasonography in the lumen of the stomach, penetrating through the gastric wall near the antrum and

coursing through the liver parenchyma (Figure 1, top; Figure 2, left). This foreign body appeared to be rectilinear and thin in shape. Its tip was seen protruding from the liver border on the right side at a depth of approximately seven mm from the surface of the skin in the intercostal region (Figure 3, left).

A jejunal lymph node was identified to be mildly enlarged to a width of 12 mm and very mildly hypoechoic. The peritoneum was mildly hyperechoic in the cranial abdomen near the liver hilum and gastric antrum.

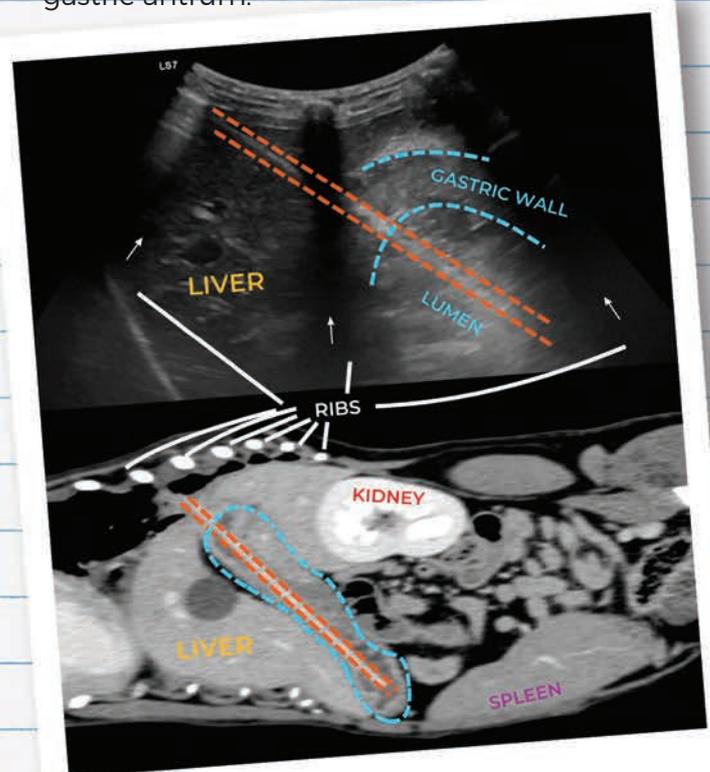


Figure 1.
Top: Ultrasonographic image of the patient's cranial abdomen through a right sided intercostal window.
Bottom: Computed tomographic rotated sagittal image of the abdomen from a similar case, for comparison and illustration purposes.

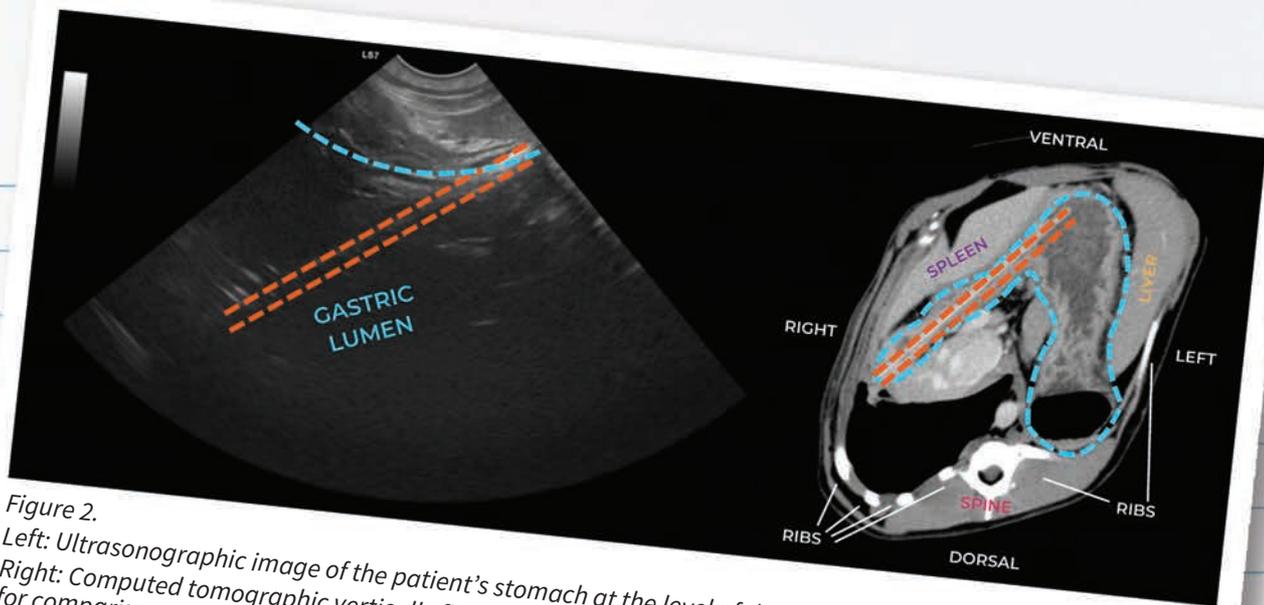


Figure 2.
 Left: Ultrasonographic image of the patient's stomach at the level of the gastric body.
 Right: Computed tomographic vertically flipped axial image of the cranial abdomen from a similar case, for comparison and illustration purposes.

The imaging diagnosis

- Penetrating liver injury by a migrating gastric perforating foreign body.
- Mild focal peritonitis and jejunal lymphadenopathy, likely reactive to tissue damage and inflammation caused by the foreign body.

A positive outcome

Considering the findings, the case was urgently transferred to our referral surgery team for foreign body removal via cranial midline coeliotomy. Surgical exploration revealed a skewer stick penetrating the gastric wall and right medial liver lobe (Figure 3, right).

The liver was gently retracted ventrally, and the stomach dorsally to allow the release and removal of the foreign body

via gastrotomy (Figure 4, right; Figure 5). The liver, stomach and adjacent structures were explored for any haemorrhage or gross contamination as a consequence of the impalement. Luckily, only mild inflammation was present in the gastric surface of the right medial liver lobe.

The patient recovered successfully, with appetite and demeanour restored and no signs of pain shortly after the surgery, allowing discharge 24 hours post-operation.

Reflections

The ingestion of foreign material is not an uncommon cause of disease in our small animal patients. These are frequently associated with signs of oesophageal

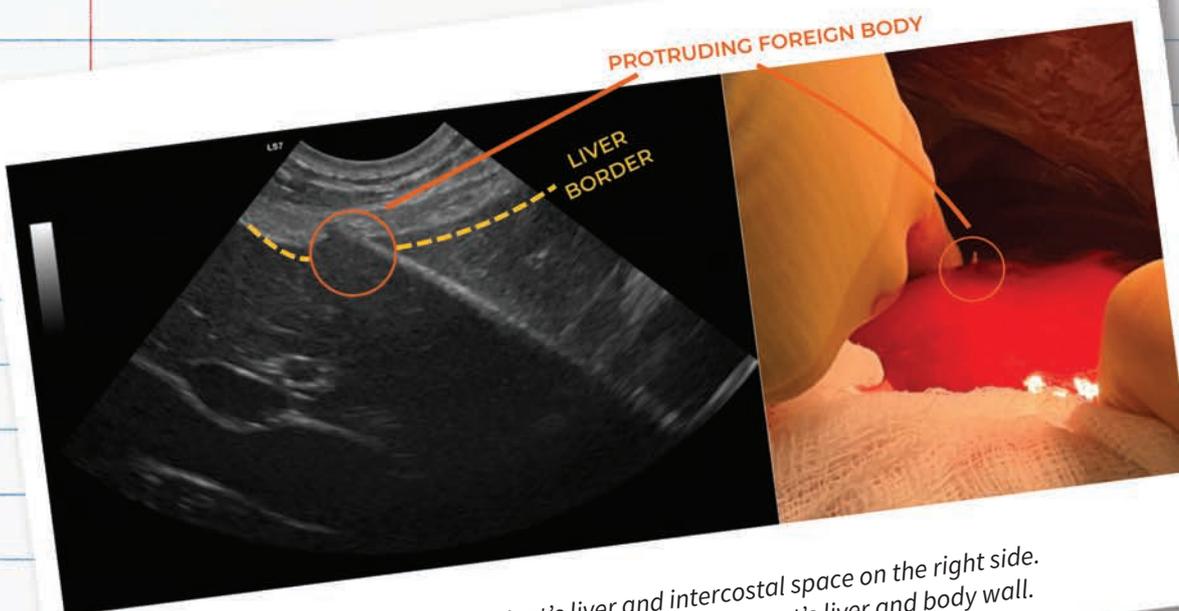


Figure 3.
 Left: Ultrasonographic image of the patient's liver and intercostal space on the right side.
 Right: Intraoperative photograph of the same region of the patient's liver and body wall.

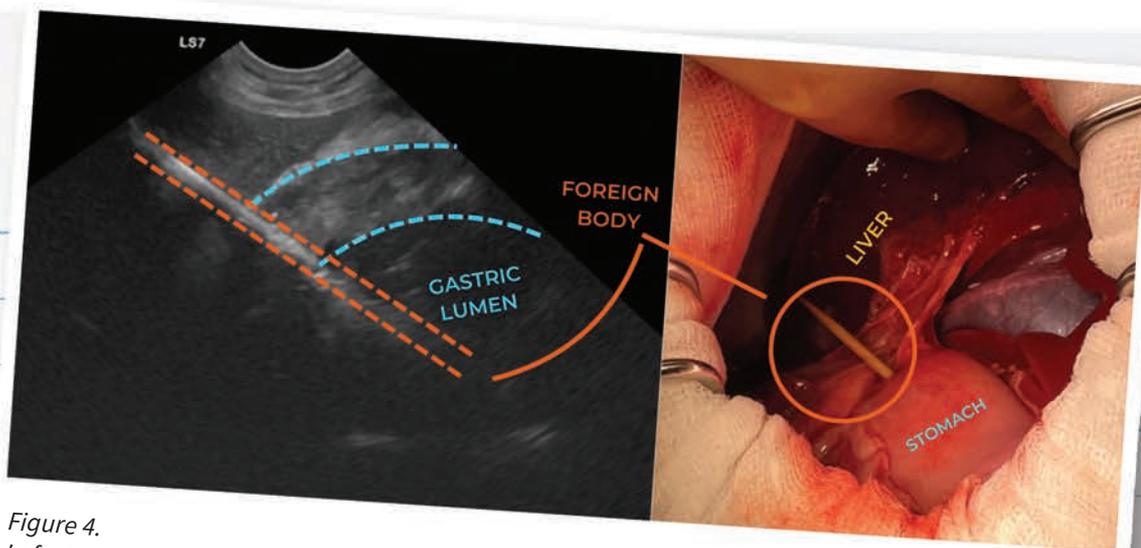


Figure 4.
 Left: Ultrasonographic image of the patient's liver and gastric wall from the right side.
 Right: Intraoperative photograph of the same region of the patient's liver (manually retracted) and gastric wall.

or gastrointestinal disease and obstruction, and often require the use of radiography and ultrasonography to reach a confident diagnosis. Gastrointestinal or oesophageal perforation is a known complication that may arise from these ingestions, with potentially life-threatening consequences. However, migration of perforating ingested foreign bodies presents as a less common aetiology subset, with a clinical presentation that may be less specific, much as it happened with the case we present. Clinical signs are often not dissimilar to those seen in cases of traumatic oropharyngeal stick injuries or migrating vegetal foreign bodies such as grass seeds [1]. As such, focal swelling of the body wall, with or without a draining tract is one of the main suggestive signs that may arise seven to 14 days after ingestion of the foreign material [2]. In the case of our patient, no typical swelling was noted, perhaps due to an earlier timing of clinical presentation. A history of witnessed ingestion of foreign material may also help focus the diagnostic investigation. In the case presented, this was not a feature on the clinical history.

When planning the imaging diagnostic approach to these cases, different modalities can be considered. Radiography, ultrasonography (US), contrast fistulography (when in presence of abscesses or draining tracts), the increasingly available computed tomography (CT) and even magnetic resonance imaging (MRI) may be used, with different advantages and disadvantages associated with each technique.

When in the presence of foreign material of radiopacity similar to that of soft tissue, such as glass, plastic, wood and vegetal material, radiography often inherently leads to false negative diagnoses [1] [2]. Fistulography attempts to compensate for this by use of positive contrast media to fill the tract or cavitated lesion and delineate foreign radiolucent material.

However, this technique is also associated with false negatives due to incomplete filling of these spaces or false positives due to artefactual filling defects. Its main advantage is associated with the potential to detect communication of tracts to adjacent body cavities [1].

In cases presenting with signs or history suggestive of a migrating foreign body, it is common to use CT as the main diagnostic imaging modality, especially in the referral setting where this is typically available and when other modalities such as radiography may have already been employed with inconclusive results. This rings true at our Manchester hospital, although in the case presented, CT was not considered as first

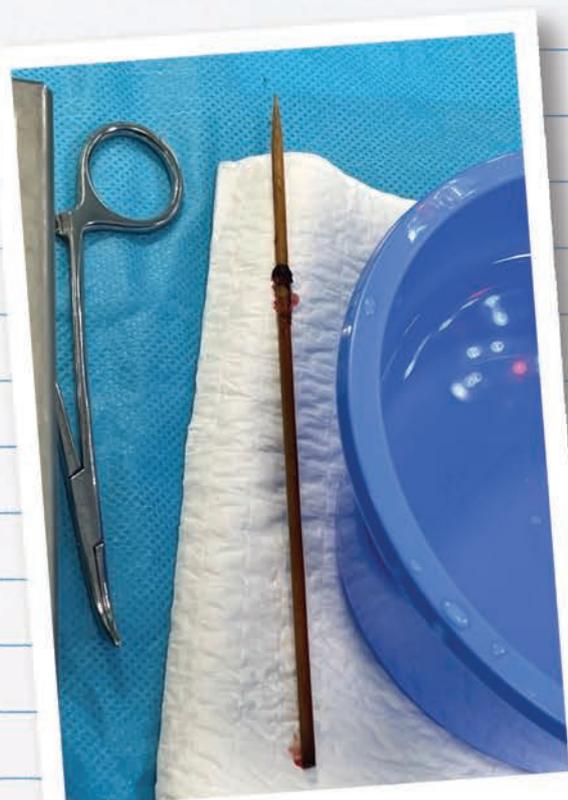


Figure 5.
 Photograph of the foreign body (skewer) after removal via gastrotomy

line due to the very non-specific clinical presentation and the lack of witnessed ingestion or clinical history suggesting a similar recent event. By definition, CT is a modality that is superior (alongside MRI) as a tool for surgical planning due to the three-dimensional assessment that it allows, leading to specific localisation of lesions and definition of their spatial relation to adjacent structures. As an x-ray-based modality, the sensitivity of computed tomography in detecting poorly radiodense migrating foreign bodies can be reduced. Factors affecting detectability include foreign body size, shape, physical nature and extension of the associated lesions. Sensitivity in detecting vegetal material may vary between 47% and 84%, whereas it may be as high as 79% to 100% for wooden foreign bodies [3]. Nonetheless, pre-operative CT scanning is associated with improvement of success rates of surgery in the management of these conditions, raising these to as high as 95% [3].

As a more inexpensive, versatile and readily available modality, ultrasonography also presents as one of the best diagnostic tools to use in these cases. A recent study found ultrasonography to be superior to other modalities in detecting migrating foreign bodies in animals [4]. This may be in part due to its enhanced capacity to detect smaller foreign bodies and the possibility for intraoperative use, advantages not seen with the other techniques [3] [4]. It is commonly used for detection of non-radiopaque foreign bodies, focal fluid collections, free gas, oedema, haematomas, inflamed tissues, and gastrointestinal tract thickening or perforation. Foreign bodies may present with variable levels of echogenicity and acoustic shadowing, making detection and assessment of size and shape at times difficult. However, chronic inflammation may enhance visualisation of foreign material due to development of surrounding hypoechoic changes [1] [2]. The inherent limitations to ultrasonography are based on poor acoustic penetration into deeper tissues or through bone and gas, making it less sensitive in detecting lesions deeper than 4cm from the scanned surface, in the presence of tissue mineralisation, bony fragments, free gas, and at the level of the distal extremities and thorax [1] [3]. This being a modality highly dependent on the operator's skill level and experience is another limiting factor. In the case of our patient the advantages of ultrasonography proved vital as it allowed for a simple, accurate, inexpensive and early detection of the ingested foreign body and associated injuries, allowing for swift surgical intervention.

Although MRI is not available at our site, this is a modality that can be useful in imaging migrating foreign material and associated lesions [5]. Similar to ultrasonography, this is a modality that allows excellent visualisation of soft tissue structures. As is true with CT, magnetic resonance imaging may be more sensitive at detecting wooden material in comparison to vegetal material and allows for accurate surgical planning [5]. The main limitations associated with the use of MRI are associated with its reduced availability in the veterinary setting and the higher associated cost and length of the scanning procedure.

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spotlight on...

Kat Alty

Team Leader in ECC

We sat down with Kat Alty, our ECC team leader to chat about her life in ICU at the Manchester hospital. A proud advocate for learning and development for her team, and safety for her patients, Kat gives her advice for other nurses wanting to get into leadership positions.



So, Kat, tell us briefly how you got to where you are now?

I have worked within ECC, referral and OOH since I qualified in 2014. In 2016 I started at Vets Now Manchester as an OOH nurse. During COVID I was a charge nurse for one part of the night team. In 2020 I moved to the day team first as a senior ECC nurse, and then became the ECC team leader.

What first drew you to ICU?

During the final year of my BSc hon's degree, we covered ECC, and the module tutor worked at an emergency hospital in Manchester. Due to my interest in the topic, she encouraged me to see this in practise at the hospital at which she worked. This was also the first practice I worked at when I qualified as an RVN.

What would you consider your career highlight?

When I moved to days and became the ECC team leader.

What do you most enjoy about working at Manchester hospital?

The mixture of ECC referral and OOH work and the fact it's a smaller more close-knit team than most referral hospitals.

What's your favourite type of condition to deal with?

I wouldn't say I have a specific condition, but I enjoy one-to-one nursing of intense patients, because of how complex they can be and rewarding if they recover.

Describe the ECC department in three words?

Fast-paced, rewarding, and teamwork.

What accomplishment of your team are you most proud of?

My team work so hard every day, looking after the most critical cases in the hospital. They have all come from different backgrounds of both referral and first option, and work hard to improve their knowledge and skill set every day so they can provide the very best care.

You completed your ECC Certificate and have since encouraged a lot of your team to do the same, how do you feel this has helped you in your career journey?

It ensures the team have a full rounded ECC knowledge and covers the kinds of cases we nurse in ICU daily.

Working in a high-pressured environment, everyone needs to decompress. What do you enjoy doing outside of work?

I find that going to the gym and taking my dog Stitch for a walk are great ways to decompress outside of work.

Tell us a bit about your passion for patient safety?

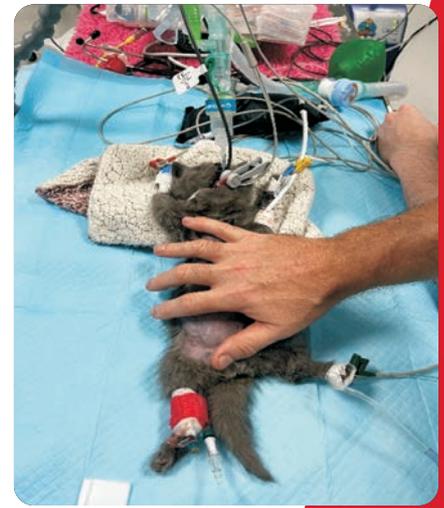
As a team leader, I review significant event reports to ensure that we learn from mistakes, provide training if necessary and make any needed changes to the way my nursing team works together. This process is crucial for ensuring patient safety.

What advice would you give other nurses looking to get into a leadership role?

When I first got the ECC team leader role I read Amy Newfield's book "Oops I became a manager" but there is lots of management CPD, some specifically based around leading in a veterinary environment, that you can do to prepare for a leadership role.

Wilson's journey

through the hospital



Day 1 OOH service

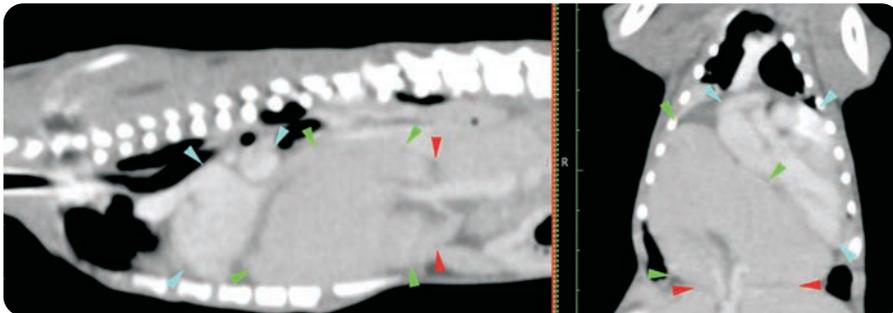
- Wilson: nine week old British short hair kitten recently acquired by the owners.
- Wilson presented to our out-of-hours service on the evening of 30th October after having breathing difficulties at home.
- On physical exam Wilson had a RR of 80 bpm with severe increased effort, especially on inspiration and dull lung sounds diffusely. His mucous membranes were cyanotic.
- Investigations: T-POCUS revealed diffuse B-lines bilaterally and mild pleural effusion.

Day 2 ECC service

- Wilson remained in ICU since admission due to the respiratory signs and the need for continued oxygen therapy.
- Repeated T-POCUS was suggestive of peritoneal-pericardial diaphragmatic hernia (PPDH) due to the liver showing up very close to the cardiac silhouette. Further investigations were postponed due to the risk of respiratory decompensation until Wilson presented more stable.

Day 3 Imaging service AM

- The imaging team performed a thoracic and abdominal CT scan, which confirmed PPDH with most liver lobes herniated into the thoracic cavity. Wilson was then transferred to our surgery team for hernia repair.



Day 3 Surgery service PM

- The surgery team took Wilson to theatre the same day as the CT scan was performed. A midline celiotomy and median sternotomy was performed to reduce the herniated liver lobes and repair of the diaphragmatic hernia.

Day 4 & 5 ECC

- The ECC team was in-charge of Wilson's post-operative recovery from immediate post-operative care to discharge 48h after surgery.

Post operative recheck with ECC/Surgery team:

- Wilson was now acting as a normal kitten, with intermittent tachypnea reported by the owner and a heart murmur grade II/VI on examination. A routine cardiology appointment was proposed to the owner at a later date.

Cardiac referral

- No structural abnormalities were noted on echocardiography and no further treatment was advised.





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