Royal Australasian College of Surgeons

Delayed diagnosis of Crohn's disease-associated liver abscesses and enteric fistulas due to COVID-19

YN is a 51-year-old female with a past history of Crohn's Disease (CD) who presented to the Emergency Department with sepsis. Her surveillance COVID-19 PCR swab was positive on admission, and she was treated for COVID-19 related sepsis by the medical team. She remained clinically unwell with raised inflammatory markers despite COVID-19 treatment. Computed Tomography Arterial Portography (CTAP) was performed to look for an alternate source of sepsis. Severe, acute complicated CD was demonstrated with more than 20 liver abscesses, active Crohn's colitis at the terminal ileum and entero-enteric fistula (Fig. 1). Non-operative management with antibiotics failed and repeat CTAP revealed coalescence of hepatic abscesses and increasing size. YN was transferred to a tertiary centre under the care of the hepatobiliary team where interventional radiological guided drainage was inserted into the largest liver abscess. Culture of hepatic abscess fluid grew *Streptococcus angionosus* and *Enterobacter clocae complex*.

Subsequent surgery was organized for source control. Preoperative MRI confirmed active CD in the terminal ileum, with two entero-enteric fistula, an enterocolic fistula involving the hepatic flexure, and a large pelvic mass due to entero-ovarian fistula and multiple liver abscess (Fig. 2). Laparoscopy for ileocolic resection, right oophorectomy and formation of abcarian stoma was performed with conversion to laparotomy due to complex omental and mesenteric architecture from long-standing CD. Operative findings confirmed the presence of terminal ileitis from severe CD, with all segments of fistulating ileal disease resected. Her postoperative recovery was complicated by a delayed postoperative bleed from mesentery on day 3 requiring take back to theatre for control of haemorrhage.

The imaging findings in this case are suggestive of 'pyogenic liver abscesses', a rare complication occasionally associated with IBD, more so with UC.[1] The incidence of IBD-associated liver

Fig. 1. Coronal CT demonstrating extensive liver abscesses and a right-sided pelvic abscess.

Fig. 2. MRI coronal demonstrating multiple complex liver abscesses and architecture of right ovarian abscess and fistulous tract joining to the ileum.

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abscess is 114–297/100000, which typically present in younger patients.[2] The presentation can clinically and biochemically mimic Crohn flares, which makes initial diagnosis challenging.[2] Risk factors are unclear, although long-term steroid treatment, fistulating disease and diabetes mellitus are associated.[2] One case report describes 'aseptic abscess syndrome' with multiple culture-negative liver and splenic abscesses that were ultimately steroid-responsive.[3]

The management of IBD-associated hepatic abscesses is challenging, especially in this case where they occupy multiple segments of the liver, demonstrate complex architecture and pathological coalescence, and are culture-positive.[4] The fistulating intestinal Crohn disease was managed with ileocolonic resection and oophorectomy for the ovarian abscess. Given the sheer number of abscesses, further decisions around access and feasibility of interventional drainage of these lesions will weigh up trialling medical management, either in conjunction with or in replacement of radiological intervention. Cases such as these have been managed with Intravenous (IV) antibiotics due to the presence of septic features, followed by interventional drainage, although not all abscesses are septic.[5,6] One case report found that aseptic abscesses were steroid-responsive.[6] In this case, upon consultation with an Infectious Disease specialist, YN was placed on IV Meropenem and subsequently discharged home 1 month postoperatively with oral Ampicillin and Metronidazole. Progress CTAP showed no active CD but residual multiple liver abscess. YN was placed back on IV Meropenem 1 month post discharge due to recurring sepsis with plan to step down to oral antibiotics.

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