Duodenal Diverticulum Causing Xanthogranulomatous Pyelonephritis with Multiorgan Involvement: First Case Report

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Dear Sir,

Xanthogranulomatous pyelonephritis (XGP) is a chronic destructive inflammatory process which very rarely originates from the digestive tract. A previously healthy 40-year-old female patient presented with an asymptomatic abdominal mass. Physical examination revealed a 10 × 15 cm tumor in the right hypochondrium which was non-tender and fixed to the liver. All laboratory tests were within normal limits. An abdominal CT scan showed a solitary multiloculated mass involving the proximal kidney and right hepatic lobe (fig. 1).

Abdominal exploration revealed a 14 × 12 cm firm mass infiltrating the proximal third of kidney, duodenum, and Couinaud segment VI of the liver. Dissection posterior to D3 found a 1.5 × 0.8 cm duodenal diverticulum which widely communicated with the necrotic center of the tumor. A radical nephrectomy, liver segmentectomy VI, and excision of the diverticulum produced a whole specimen which was sent for pathology. The resulting defect of the duodenal wall was anatomically restored in two layers. Pathology revealed XGP with extensive infiltration of the liver parenchyma and no malignancy. The patient was last seen 4 months after surgery and had no complaints; all laboratory tests remained within normal limits.

XGP is a rarely described chronic inflammatory process characterized by partial or full destruction of the kidney and replacement by granulomatous tissue containing foamy, lipid-laden macrophages

[1]. The condition's pathogenesis is possibly related to urinary obstruction, low-grade infection, abnormal lipid metabolism, arterial, venous, or lymphatic obstruction, altered immunity, hemorrhage,

Fig. 1. CT scan of the mass showing a non-enhancing rim, central fluid density, and infiltration of the liver.

fat necrosis, or malnutrition; however, the exact mechanism remains unclear [2]. A review of the literature finds no other report of duodenal diverticulum involved in the process. The published incidence of duodenal diverticuli varies from 1 to 22% depending on the diagnostic methods; spontaneous perforation of a diverticulum is casuistic, with five published reports over the past 15 years [3]. The direct involvement of our patient's duodenal diverticulum by the XGP suggests that inflammation or perforation may have triggered the XGP. The published literature provides examples of communications found between XGP and a variety of anatomic structures including the colon [4, 5], stomach [6], bronchi [7], psoas muscles [8], and the abdominal wall where the severity of the process can vary and cause phlegmona [9], necrotizing fasciitis [10], or external fistulization [11, 12]. The literature on XGP infiltrating the liver published so far describes more limited parenchymal engagement not requiring resection [13, 14]. Our recent experience reinforces that the organ involvement by XGP can be very extensive and potentially requires technically challenging multivisceral resection.

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