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Acute Intestinal Obstruction Secondary to Distal Jejunal Stricture due to Pulse Granuloma: A Rare Case Report

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ABSTRACT

Pulse granuloma is a rare lesion characterized by a foreign body granulomatous reaction to vegetable matter, and its occurrence in the jejunum is extremely uncommon. We report the case of a 65-year-old male with a past history of abdominal tuberculosis who presented with acute intestinal obstruction. Imaging suggested a proximal jejunal stricture, and exploratory laparotomy revealed a jejunal stricture with peritoneal nodules, which were surgically resected. Histopathological examination showed chronic jejunitis with ulceration, eosinophilic hyaline rings, and foreign body giant cells, confirming the diagnosis of pulse granuloma. This case emphasizes the importance of considering pulse granuloma in the differential diagnosis of jejunal strictures that clinically mimic tuberculosis or neoplasm.

I. INTRODUCTION

Pulse granuloma, also termed hyaline ring granuloma, is a rare lesion characterized by concentric hyaline rings and a granulomatous response to vegetable matter [3,7,8]. Although first described in the oral cavity, it has since been reported in the gastrointestinal tract, gallbladder, lungs, and other unusual sites [1,2,4,6,9,10,12,13]. The pathogenesis involves mucosal ulceration or microperforation allowing indigestible plant material to lodge in tissue, provoking a chronic inflammatory reaction [1,4]. The colon is most commonly affected [2,6], while jejunal involvement is extremely rare [5]. Clinically, these lesions mimic tuberculosis, Crohn's disease, or malignancy [2,5,6], making histopathology essential for definitive diagnosis [1,3,7].

II. CASE REPORT

A 65-year-old male with a history of diabetes, hypertension, and abdominal tuberculosis treated 25 years prior presented with diffuse abdominal pain, bilious vomiting, and constipation for three days. Clinical examination showed diffuse tenderness and left lumbar guarding. A CT scan of the abdomen revealed dilated jejunoileal loops with an abrupt transition, suggesting a stricture.

An exploratory laparotomy found dense adhesions and a short jejunal stricture (0.5 cm) with proximal dilatation and peritoneal nodules. The strictured segment was resected, and a side-to-side jejunojejunal anastomosis was performed. Postoperatively, the patient was discharged in stable condition after eight days.

III. HISTOPATHOLOGY AND FIGURES

Histopathology revealed chronic jejunitis with ulceration, an absence of muscularis, and fibrosis. The key diagnostic features were the presence of eosinophilic hyaline rings, calcified nodules, and foreign body giant cells, which confirmed the diagnosis of pulse granuloma.

Fig. 1. Low-power view of the resected jejunal stricture showing chronic inflammation and fibrosis (H&E stain).

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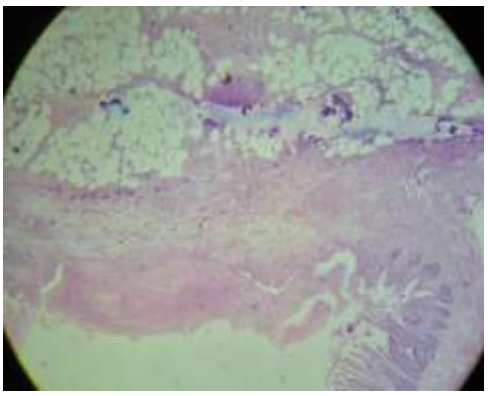

Fig. 2. Medium-power view revealing extensive fibrosis and chronic inflammatory infiltrate in the submucosa and muscle layers (H&E stain).

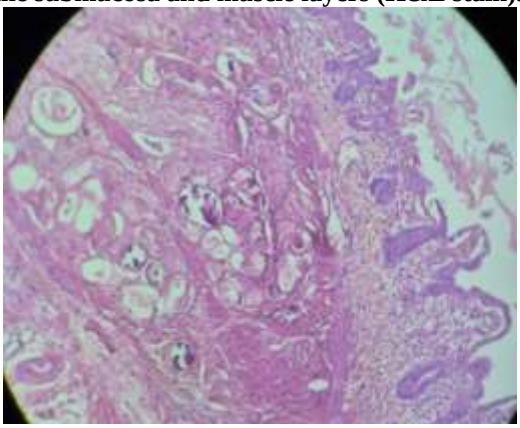

Fig. 3. High-power view demonstrating the pathognomonic eosinophilic hyaline rings and foreign body giant cells, confirming the diagnosis of pulse granuloma (H&E stain).

IV. DISCUSSION

Pulse granulomas are histologically characterized by concentric hyaline rings and a foreign body granulomatous response to entrapped vegetable matter [3,7,8]. The proposed pathogenesis involves mucosal ulceration or microperforation, which allows vegetable particles to embed in the bowel wall, triggering a chronic granulomatous reaction [1,4]. Although they have been reported in the colon, stomach, gallbladder, lungs, and other unusual sites [2,6,9,10,12,13], occurrence in the jejunum is exceedingly rare [5,10].

Clinically, pulse granulomas often mimic more common conditions such as tubercular stricture, Crohn's disease, or intestinal neoplasms [2,5,6]. In tuberculosis-endemic regions, a past history of abdominal tuberculosis can further complicate the diagnosis, as seen in our patient. Histopathology remains the gold standard for diagnosis, as it demonstrates the hallmark features—hyaline rings, vegetable matter, and calcification [1,3,7]. Surgical resection is curative, with an excellent prognosis [4,6,10].

This case highlights the importance of including pulse granuloma in the differential diagnosis of jejunal strictures, especially in patients presenting with small bowel obstruction where tuberculosis or malignancy is initially suspected [2,5,11].

V. CONCLUSION

Pulse granuloma, although rare, should be considered as a differential diagnosis in patients presenting with small bowel obstruction and strictures, especially when they mimic tuberculosis or malignancy. Histopathology is essential for definitive confirmation.

Conflict of Interest
None declared.

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