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A retained plastic protective cover mimicking malignancy: Case report

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ABSTRACT

INTRODUCTION: Cases of retained foreign bodies during surgery are more frequently seen in developing countries. Following surgical procedures, unintentionally retained foreign bodies can cause serious complications, in addition to medico-legal issues.
PRESENTATION OF CASE: A 60-year-old man presented with abdominal cramps. He had previously undergone a laparoscopic radical right nephrectomy due to renal cell carcinoma. Abdominal tomography revealed a mass surrounding the main vascular structures with malignant features in the location of previously performed nephrectomy. Further evaluation of the mass was undertaken by PET/CT. Increased FDG uptake on the PET/CT scan suggested disease recurrence. Retroperitoneal lymph node dissection was performed. The dissection specimen was opened to determine the nature of the mass. Retained plastic foreign bodies were found. There were no malignant cells in the histopathological examination of the surgical specimen.
DISCUSSION: A granulomatous reaction which is mainly responsible for morbidity occurs around the foreign bodies due to the inflammatory response. These granulomas may cause confusion during patient follow-up, especially in those who have undergone major abdominal surgery due to cancer.
CONCLUSION: Following surgical resection for malignancy, unintentionally retained foreign bodies can produce a moderate increase in FDG uptake mimicking disease recurrence.

1. Introduction

Retained foreign bodies complicate up to 1 per 1000 surgical procedures.[1] Cases with retained foreign bodies following surgery are more frequently observed in developing countries. The most frequently encountered foreign bodies are surgical sponges, surgical instruments and suture materials.[2] Many problems may be seen due to foreign bodies, most of which are caused by the inflammatory response of the host. Depending on the severity of the inflammation, penetration of the foreign material into the surrounding tissues, migration and even fistulization may be observed. Foreign bodies are more frequently forgotten following major abdominal surgery for cancer.[3] We present a patient believed to have recurrent renal cell carcinoma which turned out to be an unintentionally retained foreign body.

2. Case report

A 60-year-old man presented with abdominal cramps and right sided back pain. He had undergone a laparoscopic right radical nephrectomy for renal cell carcinoma 5 years earlier. His family history was nonspecific. Physical examination and routine blood tests were normal. Abdominal ultrasonography was nonspecific, while abdominal tomography revealed a mass surrounding the main vascular structures with malignant features in the location of previously nephrectomy (Fig. 1). Magnetic resonance imaging results were similar to abdominal tomography. We decided to use positron emission tomography (PET/CT) to determine whether the mass was malignant or benign (Fig. 2). The mass was deemed to be malignant due to increased metabolic activity with a suv max of 10.3 (normal value < 5), and surgical intervention was deemed appropriate for an apparent local recurrence of renal cell carcinoma (Fig. 3). During the operation, dense adhesions were encountered between the ascending colon and the retroperitoneum. The right colon and duodenum were dissected from the retroperitoneum. A firm mass was detected with irregular borders surrounding the inferior vena cava and aorta. Dissection began from the distal to the proximal part of the mass. Retroperitoneal lymph node dissection including the periaortic and pericaval lymph nodes was performed. The region of previous operation was also included in the dissection (Fig. 4).

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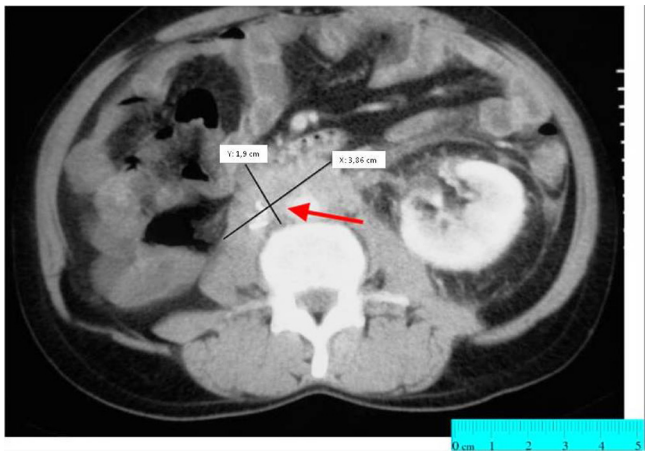

Fig. 1. A mass image surrounding the main vascular structures containing calcifications is observed in computerized *axial* tomography.

The resected specimen was opened and unintentionally retained plastic foreign bodies were found (Fig. 5A). Detailed analysis of the patient's previous operative note and the hospital bill showed that an endovascular stapler [45 mm articulating vascular stapler (Ethicon Endosurgery, CA)] had been used for vascular control (Fig. 5B). We matched the specimen and the endovascular stapler and recognized that the foreign bodies exactly resembled the plastic protective cover of the vascular stapler. There were no malignant cells in the histopathological examination of the surgical specimen.

3. Discussion

Radical nephrectomy is the most effective treatment for localized renal cancers.[4] The most important prognostic criteria in renal cancers are lymph node involvement and the presence of metastatic foci that are also known to have the ability to metastasize by lymphatic and hematogenous spread. Parker is the first author who outlined the renal lymphatic drainage pathways. However, Robson described the details of the technique of retroperitoneal lymph node dissection.[5] Currently, this technique is modified to limited dissection of the para-precaval and hilar lymph nodes in right-sided tumors, and of para-preaortic and

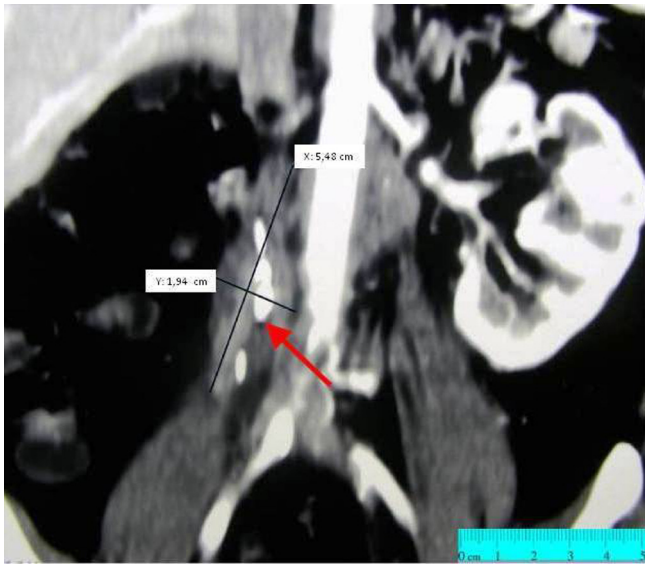

Fig. 2. A mass shows hyper intense signal intensity related to adjacent muscle and aorta in coronal image of contrast *abdominal computed tomography*.

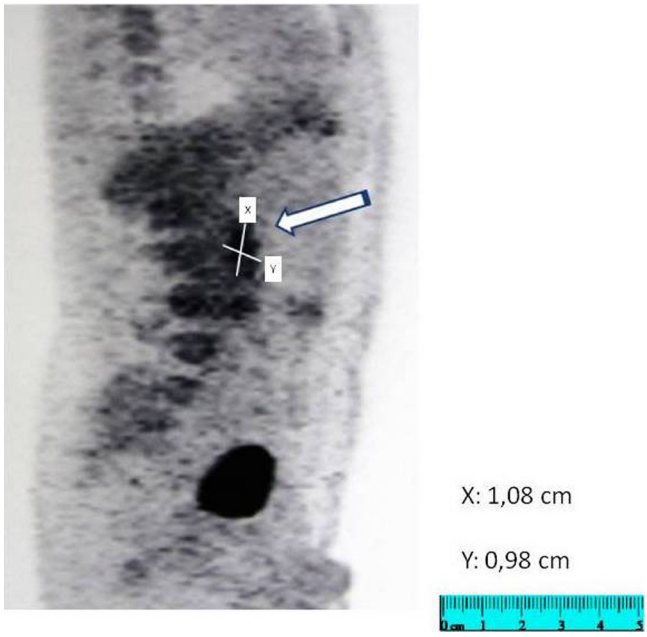

Fig. 3. A mass reveals intense homogeneous uptake (arrow) in axial PET/CT fusion.

hilar lymph nodes in left-sided tumors.[6,7] Radical nephrectomy and lymph node dissection can be performed by minimally invasive techniques. However, many surgeons still choose the conventional technique to provide a complete resection with safe surgery. Following major surgical procedures, such as radical nephrectomy, unintentionally retained foreign objects can result in serious complications, in addition to medico-legal issues. In spite of the number of preventive measures currently taken, retained foreign objects are still encountered in 0.3 to 1 per 1000 cases.[8] The main factors responsible for retained foreign objects during operations are long operating hours, inefficient and inexperienced surgical personnel, inattentiveness of the surgeon, emergent cases, extremely obese patients, and the application of new surgical techniques.[9] Systemic procedures, team briefings and double checking sponge and instrument counts have been introduced at least once to prevent such cases. The most frequently retained foreign objects are surgical sponges, surgical instruments, and suture materials. The clinical picture is usually non-specific and varies according to the localization and the nature of the foreign object.

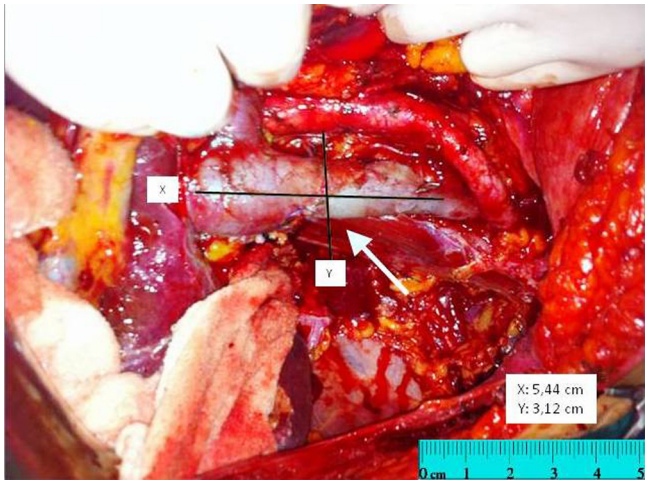

Fig. 4. Operation field after resection and periaortic-pericaval lymph node dissection.