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INFLAMMATORY PSEUDOTUMOR AT NEPHRECTOMY SITE: A DIAGNOSTIC DILEMMA

Radio-Diagnosis

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ABSTRACT

Inflammatory pseudotumors are unusual neoplasms that develop due to a variety of inciting factors including surgical exploration. As these are not very common, with no pathognomonic imaging features, they often pose a diagnostic dilemma. We present a case of a 42-year-old patient with renal cell carcinoma, status post nephrectomy. A contrast enhanced CT, performed nearly two years after surgery, revealed a soft tissue mass at the renal operative bed, which was reported as recurrence due to its worrisome appearance. An ultrasound guided biopsy of the mass, however, revealed it to be an inflammatory pseudotumor. In hindsight, we review the case and evaluate if the possibility of inflammatory pseudotumor could have been considered as a differential in the CT performed prior to the biopsy.

KEYWORDS

Inflammatory Myofibroblastic Tumor, Inflammatory Pseudotumor(ipt), Fat Necrosis.

1. INTRODUCTION.

Inflammatory pseudotumor, often referred to as the "great mimicker", is a rare, benign process mimicking a malignancy and is found in almost every organ system including at post operative sites.[1] It has nonspecific imaging features and diagnosis is usually based on histopathological features. Distinguishing this entity from malignancy/recurrence is challenging but very crucial, in order to avoid unnecessary surgical resection. We discuss in detail, a rare case of IPT, in a post nephrectomy patient reported as recurrence of clear cell carcinoma.

2. Case presentation.

A 42-year-old patient, presented with haematuria, for which a contrast enhanced CT scan was performed, which revealed a 7 x 6 cm left renal neoplasm. The patient underwent complete left nephrectomy. A large tumour measuring 7 x 6 x 5 cm was resected along with the left kidney. Histopathological diagnosis was clear cell carcinoma (grade 2) with negative surgical resection margins. There was no renal vein thrombus. Two years after the surgery, a routine abdominal ultrasound was performed, which revealed an ill-defined hypoechoic soft tissue at the left renal bed, with no obvious internal vascularity. A contrast enhanced CT scan was promptly performed, which revealed a mildly lobulated, inhomogeneous and mildly enhancing lesion in the left renal bed. Encasement of the abdominal aorta, with focal encasement of the IVC by this lesion was noted (refer to figure A ,B). Based on these findings, a possibility of recurrence was suggested.

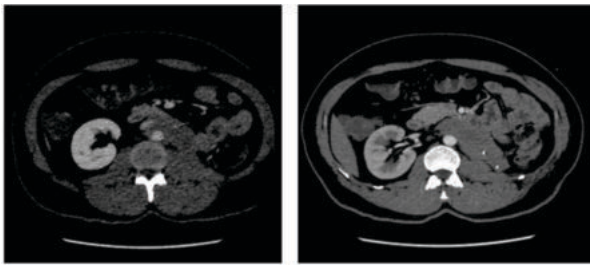

Figure A,B: Contrast enhanced axial CT image showing mildly enhancing soft tissue mass in the post operative bed extending into the retroperitoneum focally encasing the aorta and the IVC.

Without any further delay, after discussion with the referring urosurgeon, an ultrasound guided core biopsy was performed.

The histopathology report revealed fibroadipose tissue with inflammatory infiltrate. Immunohistochemistry was also performed which revealed no granuloma/necrosis and no epithelial cells/tumor cells.

Features were consistent with fibrosclerosing inflammatory process. No recurrence (refer to figure C).

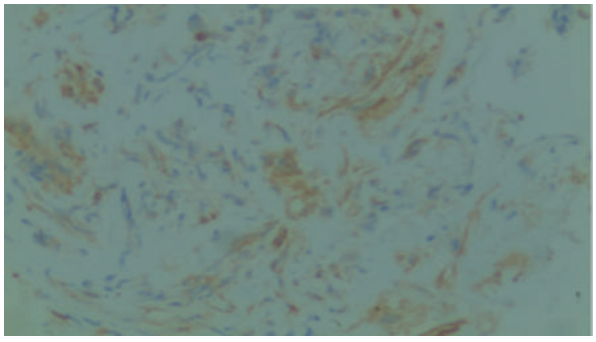

Figure C: Pictomicrograph showing fibrosis. No atypical epithelial cells-100X, H and E

3. DISCUSSION.

Inflammatory pseudotumor, a benign and rare entity, is noted at nearly every site in the body. Various names are used to describe it including inflammatory myofibroblastic tumour,[1] xanthogranuloma, cellulose granuloma[2], surgical granuloma [3] lipogranuloma[4]. Umiker and Iverson coined the term "inflammatory pseudotumor" because of its clinical and imaging resemblance to malignancies. [5]

Another variant of inflammatory pseudotumor is Schloffer's tumor, which is an immune response to foreign bodies such as those used in surgery which have potential to evoke inflammation[6,8]. This is the likely etiology for the origin of pseudotumor in our case.

A study by Asano et al [6]reported the development of inflammatory pseudotumours within one year of colorectal surgeries which involved the use of absorbable sutures. Similar to our case, they also developed within the abdominal cavity. These tumors showed high uptake on FDG PET, which was not performed in our case.

A case report by Mitsuo Ofude revealed the presence of inflammatory pseudotumor at a port site after partial nephrectomy for renal cell carcinoma.[9] The study considered fat necrosis or chronic micro abscess formation as the possible etiologies for the formation of pseudotumor at operative site, which could be the possible etiologies in our case as well. Amblee and Ganesh[7] reported a similar case of inflammatory pseudotumor caused by fat necrosis, at adrenalectomy site, in a patient with Cushing's tumor. Since adrenal gland was also resected in our case, the possibility of the etiology being fat necrosis is likely.

However, there was no evidence of fat necrosis on histopathology.

Since timely diagnosis of inflammatory pseudotumor was made in our case, which is a benign entity, the patient was conservatively managed and unnecessary surgical resection was hence avoided. The histopathological evaluation in our case revealed fibrosclerosing inflammatory process.

The preoperative diagnosis of inflammatory pseudotumors is difficult because it is a rare entity and not many cases have been reported till date. This condition has no pathognomonic radiologic findings and PET CT shows high uptake in both inflammatory pseudotumor as well as recurrence. [4,6,10]

However, the retrospective evaluation of this case gives very important imaging pearls. A clear cell carcinoma is a very vascular tumor and the recurrence or metastasis of the same should also behave similarly. In our case, the soft tissue lesion had very mild enhancement. Inspite of the close proximity of the lesion to the retroperitoneal vessels, there was compression but no invasion or thrombosis which was unusual for a recurrence, as they are known to behave aggressively. Hence the possibility of inflammatory pseudotumor should have been considered.

Song et al [11] reported 16 cases of port site metastasis after robotic and laparoscopic surgery for renal cell carcinoma. Most of these cases were operated for partial nephrectomy, with risk of incomplete tumor resection or entrapped cells during surgery, which may have led to recurrence. In the other cases, rest of the metastasis was seen in initially aggressive renal cell tumor. Since our case involved complete nephrectomy, with negative resection margins, possibility of recurrence was less likely.

CONCLUSION

Though rare, the possibility of inflammatory pseudotumor should always be considered in order to avoid unnecessary surgical resection.

Learning points

Our case was reported as recurrence based on CT findings and the diagnosis of inflammatory pseudotumor was established on histopathology. Retrospective evaluation of the case revealed few subtle hints in imaging which pointed towards the final diagnosis:

1) The soft tissue mass at the operative site showed only mild enhancement and no vascular invasion, which is unusual for recurrence of an aggressive tumor like clear cell carcinoma.
2) The patient had undergone complete nephrectomy with negative tumor margins, which greatly reduces the possibility of recurrence.
3) There was no other metastasis.

…based on these features, in hindsight, we feel that the possibility of inflammatory pseudotumor should always be considered in such cases and histopathological confirmation be sought to avoid unnecessary surgical intervention avoiding inconvenience and morbidity to the patient

Conflicts of interest

The authors reveal that they have no conflicts of interest and have received no funding for this work.

REFERENCES.

1) Patnana M, Sevrukov A, Elsayes K, Viswanathan C, Lubner M, Menias C. Inflammatory Pseudotumor: The Great Mimicker. American Journal of Roentgenology. 2012;198(3): W217-W227.
2) Tefik T, Sanli O, Oktar T, Yucel O, Ozluk Y, Kilicaslan I. Oxidized regenerated cellulose granuloma mimicking recurrent mass lesion after laparoscopic nephron sparing surgery. International Journal of Surgery Case Reports. 2012;3(6):227-230.
3) Agarwal M, Mandal A, Agarwal S, Lal A, Prakash M, Mavuduru R et al. Surgicel Granuloma: Unusual Cause of "Recurrent" Mass Lesion After Laparoscopic Nephron-sparing Surgery for Renal Cell Carcinoma. Urology. 2010;76(2):334-335.
4) Takagi K, Kawase K, Minoshima K, Yamaha M, Horie M. Retroperitoneal lipogranuloma mimicking recurrence of renal cell carcinoma after laparoscopic partial nephrectomy. Urology Case Reports. 2019;26:100940.
5) Umiker W, Iverson L. POSTINFLAMMATORY "TUMORS" OF THE LUNG. Journal of Thoracic Surgery. 1954;28(1):55-63.
6) Asano E, Furuichi Y, Kumamoto K, Uemura J, Kishino T, Usuki H et al. A case of Schloffer tumor with rapid growth and FDG-PET positivity at the port site of laparoscopic sigmoidectomy for colon cancer. Surgical Case Reports. 2019;5(1).
7) Amblee A, Ganesh M. Retroperitoneal Fat Necrosis in a Patient with Extensive Weight Loss After Adrenalectomy for ACTH-Independent Cushing Syndrome: A Case Report and Review of the Literature. AACE Clinical Case Reports. 2016;2(4):ee316-ee320.
8) Yazyi F, Canullan C, Baglietto N, Klappenbach R, Alonso Quintas F, Alvarez Rodriguez J et al. Schloffer's tumor: Case report and review of the literature. International Journal of Surgery Case Reports. 2014;5(12):1234-1237.
9) Ofude M, Nakagawa R, Urata S, Miyagi T, Nakashima T, Minato H. Inflammatory Pseudotumor Formation at a Port Site after Robotic Partial Nephrectomy for Renal Cell Carcinoma. Case Reports in Urology. 2020;2020:1-4.
10) Shimokihara K, Kawahara T, Takamoto D, Mochizuki T, Hattori Y, Teranishi J et al. Port site recurrence after laparoscopic radical nephrectomy: a case report. Journal of Medical Case Reports. 2017;11(1).
11) Song J, Kim E, Mobley J, Vemana G, Tanagho Y, Vetter J et al. Port Site Metastasis after Surgery for Renal Cell Carcinoma: Harbinger of Future Metastasis. Journal of Urology. 2014;192(2):364-36