Urology Case Reports 24 (2019) 100865

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr

Oncology

Intra-abdominal desmoid tumor mimicking local recurrence of renal cell carcinoma after laparoscopic partial nephrectomy

Ryoei Hara*, Tomohiro Fujii, Shin Ohira, Mikako Kaifu, Yoshiyuki Miyaji, Atsushi Nagai

Department of Urology, Kawasaki Medical School, Kurashiki, Japan

ARTICLE INFO

Keywords:
Desmoid tumor
Fibromatosis
Renal cell carcinoma
Laparoscopic nephrectomy

ABSTRACT

A 64-year-old man had an intra-abdominal mass that was detected in a follow-up examination after laparoscopic partial nephrectomy for renal cell carcinoma (RCC). CT showed an enhanced mass of 2.5-cm diameter near the right kidney, where partial nephrectomy had been performed. Local recurrence of RCC with duodenum invasion was suspected, and excision was performed. The final pathological diagnosis of desmoid tumor differed from the preoperative diagnosis. Therefore, we report this case as a rare example of intra-abdominal desmoid tumor mimicking local recurrence of RCC. To our knowledge, this is the first report of intra-abdominal desmoid tumor after laparoscopic partial nephrectomy.

Introduction

Desmoid tumor is a very rare tumor that has an incidence of about 2.4 per 1,000,000 each year and is sometimes caused by surgery or injury.[1] Here, we report a case of an intra-abdominal desmoid tumor that mimicked local recurrence of RCC.

Case presentation

A 64-year-old man was found to have an intra-abdominal mass in a follow-up examination after laparoscopic surgery for renal cell carcinoma (RCC). He had no relevant family history. The patient had been referred to our hospital 18 months earlier for an incidental renal mass of 1.5 cm in diameter that was suspected to be RCC, and laparoscopic right partial nephrectomy had been performed. The surgery had been successful with no perioperative complications. The pathological diagnosis was pT1aN0M0, clear cell RCC (G2, Fuhrman G3, INFa, v0, ly0) and the surgical margin was negative.

Early-phase CT before partial nephrectomy had shown an initial enhanced 1.5-cm diameter mass in the right ventral kidney (Fig. 1A). Follow-up CT 18 months after surgery showed a new enhanced 2.5-cm diameter mass near the right kidney, where partial nephrectomy had been performed. The new mass appeared to be invading the duodenum (Fig. 1B). Sonazoid-enhanced contrast ultrasonography also suggested an invasive mass in the duodenum wall, and PET/CT revealed FDG accumulation in the mass and duodenum wall (Fig. 1C). All laboratory

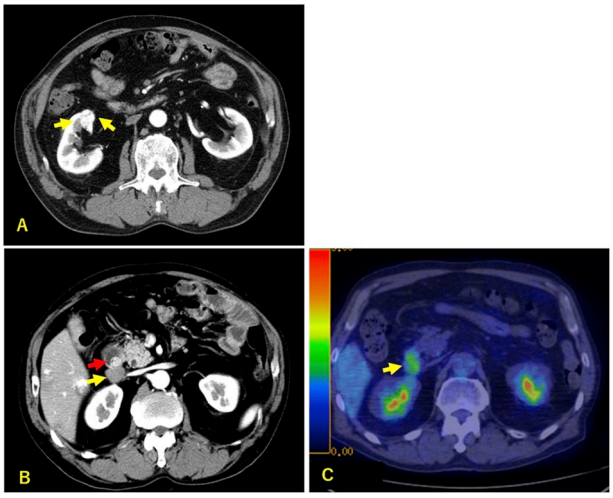

Fig. 1. A. Early-phase CT showed an enhanced 1.5-cm diameter mass (yellow arrow) in the right ventral kidney. The mass was suspected to be RCC, and laparoscopic right partial nephrectomy was performed. B. CT showed an enhanced 2.5-cm diameter mass (yellow arrow) near the right kidney, where partial nephrectomy had been performed. The mass appeared to have invaded the duodenum (red arrow). C. PET/CT revealed FDG accumulation (yellow arrow) in the mass and duodenum wall. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

*Abbreviations:*RCC, renal cell carcinoma

* Corresponding author. Department of Urology, Kawasaki Medical School, 577 Matsushima, Kurashiki-city, Okayama, Japan.
E-mail address: ryoeih@med.kawasaki-m.ac.jp (R. Hara).

https://doi.org/10.1016/j.eucr.2019.100865
Received 10 January 2019; Received in revised form 1 March 2019; Accepted 13 March 2019
Available online 15 March 2019

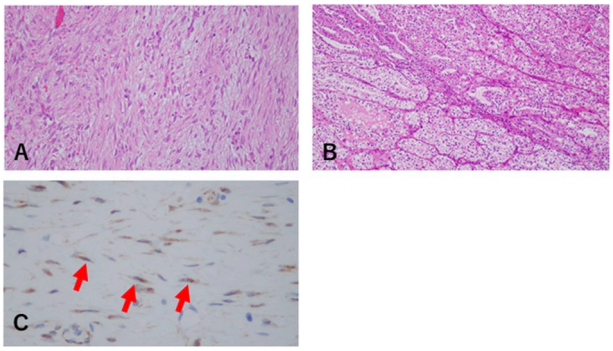

Fig. 2. A, B. Comparison of histological findings for the tumors resected in the two procedures. The findings for the second tumor differed from those of clear cell RCC resected in the initial nephrectomy: there was little abnormal mitosis or cellular atypia (A), and the image showed typical clear cell carcinoma (B). C. Immunohistochemical staining showed that the nuclei of tumor cells were positive for beta-catenin (red arrow), which is a non-specific marker for desmoid tumor. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

findings were within normal ranges, except a slightly decreased Hb level (11.2 g/dl). Therefore, we suspected local recurrence of RCC and we removed the mass and duodenum. Intraoperatively, the mass arose from the Gerota fascia and adhered strongly to the duodenum. Fortunately, we were able to complete the surgery without pancreatoduodenectomy. The surgical time was 325 min, blood loss was 430 ml, and there were no perioperative complications.

Histologically, the tumor was composed of uniform, spindle cells within a collagenous matrix. There was no necrosis, and very little abnormal mitosis and cellular atypia were observed. Microscopically, the image was totally different from the previously resected clear cell RCC (Fig. 2A and B). Immunohistochemical staining showed that the tumor cells were positive for beta-catenin only (Fig. 2); negative for smooth muscle actin (SMA), S-100 protein and CD34, which are markers for gastrointestinal stromal tumor; and negative for other markers of RCC. These findings led to a final pathological diagnosis of desmoid tumor, which differed from the preoperative diagnosis. Neither desmoid tumor nor RCC has recurred during a 30-month follow-up period after the second surgery.

Discussion

Desmoid tumor is a rare tumor that has no metastatic potential, but occasionally shows invasive growth. Desmoid tumor after surgery for RCC has been described in three previous case reports[2–4] based on a PubMed search using key words of “desmoid tumor”, “desmoid-type fibromatosis”, or “fibromatosis and nephrectomy”. The characteristics of these three cases and our case are shown in Table 1. Three of the patients were male and one was female. The time of onset of desmoid tumor after surgery was > 18 months in all cases. The location of the tumor was the abdominal wall in two cases, the rectus abdominis muscle in one case, and intraperitoneal in the vicinity of the duodenum in our case. In three cases, including our case, the desmoid tumor appeared in a location directly associated with surgery. Surgery for RCC was performed by open nephrectomy in the three previous cases; therefore, our case was the only surgery using laparoscopic partial nephrectomy. Recurrence did not occur in long-term follow-up in three cases, and was not discussed in one case.

In our case, intra-abdominal desmoid tumor was diagnosed based on histological findings and immunohistochemical staining. Only expression of beta-catenin is positive in desmoid tumor immunohistochemically,[5] which helps with diagnosis; however, the lack of specific markers for desmoid tumor requires diagnosis by exclusion. In preoperative diagnosis, the desmoid tumor was regarded as local recurrence of RCC based on FDG accumulation in PET/CT. This method is widely used for staging and differential diagnosis, but distinguishing between malignant and benign tumors using PET/CT is difficult because increased SUVs may occur in both types of tumors.

Conclusion

We experienced an extremely rare case of intra-abdominal desmoid tumor that mimicked local recurrence of RCC. This is the first case report of intra-abdominal desmoid tumor after laparoscopic partial nephrectomy, as far as we are aware. Laparoscopic surgery is widely performed, and the possibility of desmoid tumor should be kept in mind in follow-up after this surgery for a malignancy.

Table 1
Characteristic of cases of desmoid tumors found after surgery for renal cell carcinoma.

Author	Age	Sex	Time of onset after surgery	Location	Surgical form	Recurrence/Follow-up
Fujita et al.	53	M	2 years	abdominal wall	open	no/2 years
Janitzky et al.	65	F	3 years	rectus abdominis muscle	open	not listed
Ohtake et al.	71	M	29 months	abdominal wall	open	no/13 months

Declarations of interest

None.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Reitamo JJ, Hayry P, Nykri E, Saxen E. The desmoid tumor. I. Incidence, sex, age and anatomical distribution in the Finnish population. *Am J Clin Pathol.* 1982;77:665–673.
2. Fujita K, Sugao H, Tsujikawa K, Itoh Y. Desmoid tumor in a scar from radical nephrectomy for renal cancer. *Int J Urol.* 2003;10:274–275.
3. Janitzky A, Porsch M, Daher M, Küster D, Liehr UB. [Aggressive fibromatosis (desmoid tumor): a rare differential diagnosis of metastasis of renal cell carcinoma]. *Urologe.* 2010;49:81–83.
4. Ohtake S, Namura K, Fujikawa A, et al. [A case of abdominal wall desmoid tumor after radical nephrectomy for renal cancer]. *Hinyokika Kiyo.* 2015;61:353–357.
5. Duan M, Xing H, Wang K, et al. A large and aggressive fibromatosis in the axilla: a rare case report and review of the literature. *OncoTargets Ther.* 2018;11:3179–3184.