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Inflammation and infection

Intra renal epidermal cyst simulating a renal tumor: A case report

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ABSTRACT

Epidermoid cyst is an unusual and very rarely described lesion in the kidney. We report the case of a 45-year-old woman with no known pathological history who presented with right flank pain accompanied by macroscopic hematuria. The physical examination was unremarkable. The CT scan evoked a malignant tumor in front of a right renal mass with irregular contours. The patient underwent a total right nephrectomy. The nephrectomy specimen received for pathological examination showed macroscopically an encapsulated cystic mass of 4 cm long axis. The cyst lumen was occupied by solid brownish tissue debris. Histologically, the cystic wall was lined by a keratinizing squamous epithelium with accumulation of keratin lamellae in the cystic lumen. Anatomo-pathological examination concluded to the diagnosis of renal epidermoid cyst.

1. Introduction

Epidermoid cyst in its renal location is very rare.[1–3] There are few documented cases reported in the literature.[1] On imaging, it presents an unreassuring appearance and may be mistaken for a malignant tumor. Its histological characteristics are similar to those of cutaneous epidermoid cysts but its histogenesis is not well known. We report a case of renal epidermoid cyst diagnosed on anatomopathological examination of a nephrectomy specimen performed for suspicion of renal malignancy.

2. Case report

This is a 45-year-old woman who complained of right flank pain with dysuria and macroscopic hematuria for 6 months. Her general condition was well preserved and the physical examination was unremarkable. The CT scan evoked a malignant tumor of the kidney in front of an intra parenchymatous mass with irregular contours (Fig. 1).

A total right nephrectomy was performed without incident or accident. Macroscopic examination was performed on a total nephrectomy specimen of 10 × 5 × 4 cm with a ureter of 6 × 0.5 cm.

The specimen showed an intra parenchymal encapsulated cystic mass of 4 × 2 × 2 cm with solid brownish tissue debris in the lumen. No lithiasis was found (Fig. 2).

Histologically, the cystic wall was lined by a keratinized multilayered squamous epithelium supported by a regular basement membrane with a conspicuous granular layer. The cystic lumen was filled with keratin lamellae. The cyst was separated from the adjacent renal parenchyma by fibrous tissue (Fig. 3A and B).

The diagnosis of renal epidermoid cyst was retained. The postoperative course was simple and without complications. After one year, the patient's general condition was good.

3. Discussion

Renal epidermoid cyst is a very rare lesion with few cases reported in the literature.[1–3] Its incidence is reported to be higher between the sixth and seventh decade of life without a predilection for gender.[1] The pathogenesis of epidermoid cyst of the kidney is still poorly understood and several theories are discussed. Among these, the theory of epidermal remnants of Wolf's duct undergoing aberrant ectodermal implantation during embryogenesis seems to be the most widely shared.[1–3] Another

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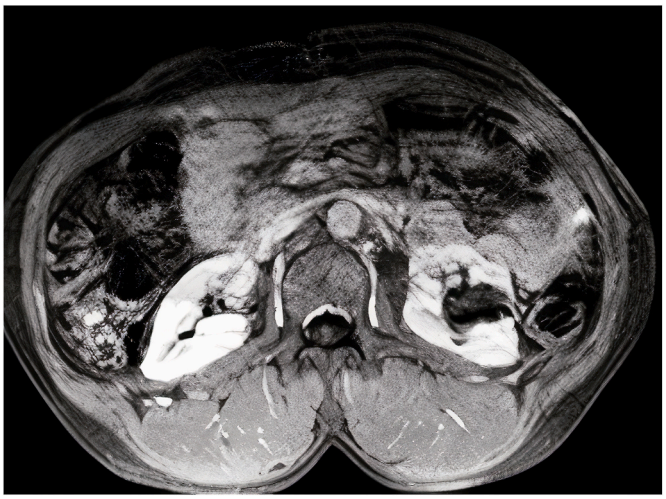

Fig. 1. CT image showing right renal lesion.

Fig. 2. Macroscopic section of the kidney showing an encapsulated cystic lesion occupied by brownish friable solid tissue.

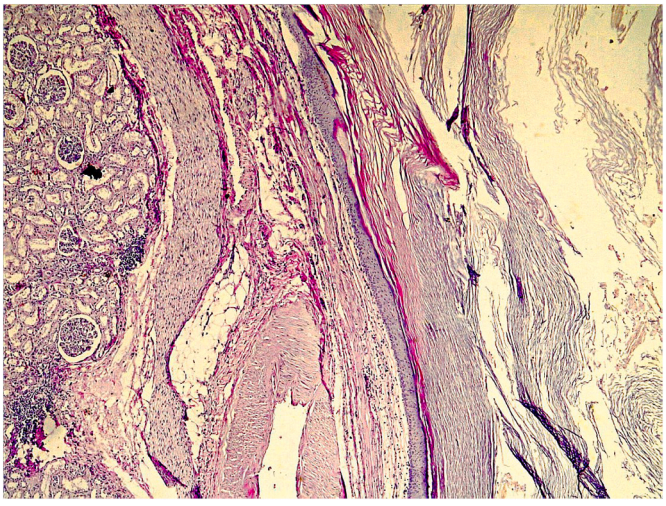

Fig. 3A. microscopic image G100, HE stain, showing on the right a cystic wall lined by a keratinizing squamous epithelium. On the left there is a renal parenchyma without atypia separated from the cystic wall by a fibrous tissue.

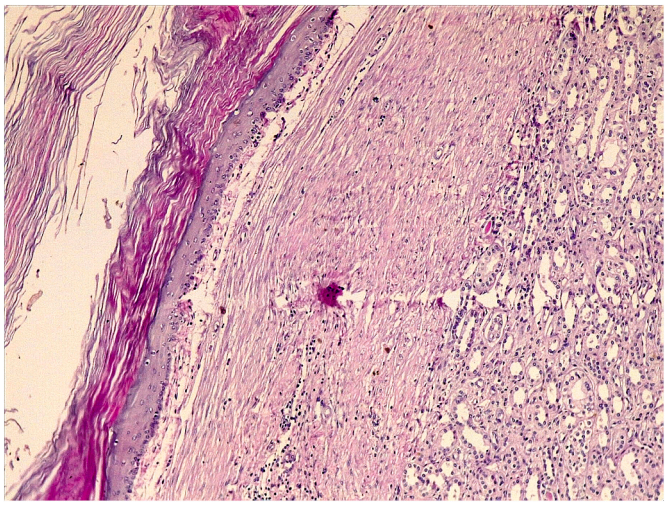

Fig. 3B. Microscopic image, G200, HE stain, showing on the left the cystic wall lined by a keratinizing pluristratified squamous epithelium separated from the renal tissue on the right by a fibrous tissue.

theory cited incriminates squamous metaplasia of the urothelium of irritative or deficiency origin1. The irritative origin of squamous metaplasia of the urothelium would be related to microtrauma induced by lithiasis formations or associated with their treatment by lithotripsy. This theory is defended in an article published in 2003 by Lim et al.[4] Squamous metaplasia of the urothelium of deficiency origin would be favored by a vitamin A deficiency.[1] More recently, the publication of Verma et al. highlights the effect of prolonged use of tacrolimus, an immunosuppressant used in the prevention of transplant rejection, in the occurrence of renal epidermoid cysts.[5] Our patient is relatively younger than the average age found in the literature and has no notable pathological history. There is no evidence of lithiasis or renal transplantation.

Clinically, renal epidermoid cysts are not associated with specific symptoms. The most frequent symptoms are diffuse lumbar pain and macroscopic or microscopic hematuria, which were found in our patient. Another symptom described is renal colic in connection with the presence of renal lithiasis.[1,3]

On CT scan, the epidermoid cyst of the kidney usually presents as a cystic lesion with irregular contours and possible calcifications in the cystic wall or lumen. In our patient, parietal and intracystic calcifications were not found. The irregularity of the cystic contours raised the suspicion of a malignant tumor.[1]

On histology, the renal epidermoid cyst presents as a cystic cavity lined by stratified keratinizing squamous epithelium with a clearly visible granular layer. The cystic lumen is occupied by keratin lamellae. The histological differential diagnosis is with dermoid cyst and cystic teratoma. The dermoid cyst is also made up of structures of ectodermal origin like the epidermoid cyst. However, unlike the epidermoid cyst, the dermoid cyst has pilosebaceous appendages in addition to the keratinizing squamous coating. Cystic teratomas are distinguished from epidermal cysts by the presence of structures derived from at least two embryonic layers.[2]

As in our patient, the treatment recommended in most cases described in the literature is surgical treatment.[1–3] This treatment consists of a total or partial nephrectomy depending on the size and location of the lesion. The postoperative course is usually satisfactory with a good evolution and a good prognosis.

4. Conclusion

Renal epidermal cyst is a rare and benign lesion. Its preoperative diagnosis constitutes a real challenge because of its rarity, its low clinical

and especially radiological specificity which can make it mistaken for a malignant tumor. Anatomopathological examination often rectifies the diagnosis after a nephrectomy, the indication of which could have been discussed if the diagnosis was known preoperatively.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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