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Fortuitous discovery of a resectable primary mucinous adenocarcinoma of the seminal vesicle in a young patient: Case report

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ABSTRACT

Primary seminal vesicle adenocarcinoma is an extremely rare tumor. Accurate recognition of malignant neoplasms of the seminal vesicle is a crucial condition to establish a correct treatment that leads to improvement of long-term survival. Diagnosis of seminal vesicle carcinoma is based on many methods including imaging, biology, and pathological assessment, especially by means of immunohistochemistry. Herein, we report a case of primary mucinous adenocarcinoma of the seminal vesicle mimicking a benign congenital cyst in a 25-year-old patient, fortuitously discovered on a pelvic computer tomography scan.

1. Introduction

Seminal vesicle primary tumors are rare. Malignant neoplasms are even rarer and are classically diagnosed in old patients (Over the age of 55), with only 60 confirmed cases in the English literature.[1,2] An improvement in survival can be achieved by the establishment of a correct diagnosis, which is generally possible by means of pathological and immunohistochemical assessment.[1,3]

To the best of our knowledge, no cases of seminal vesicle carcinoma mimicking a benign cystic lesion in a young patient have been reported in the English literature.

Herein, we report a case of primary mucinous adenocarcinoma of the seminal vesicle mimicking a benign congenital cyst in a 25-year-old patient, fortuitously discovered on a pelvic computer tomography scan.

2. Case presentation

We report a 25-year-old male patient, with a history of portal hypertension, secondary to liver cirrhosis.

He had a 3 years-history of recurrent prostatitis treated with long-term anti-biotherapy with resolution of symptoms. He reports no hematuria and no other urological symptoms. He has undergone follow-up ultrasonography, which revealed the presence of a hyperechogenic material inside the portal vein.

A contrast-enhanced (CT) abdominal and pelvic computed tomography scan has been performed revealing a thrombosis of the portal vein, with the discovery of a 25 × 22 mm, mildly enhanced cystic lesion of the right seminal vesicle with no evident invasion of the seminal vesicle or any other surrounding organs (Fig. 1).

The contrast-enhanced computed tomography revealed no congenital anomalies, namely no ectopic ureter, and no kidney agenesis.

Biological investigations have revealed an elevated cancer antigen 125 (CA-125) at 56 Units/ml. Prostate-specific antigen (PSA), prostatic acid phosphatase (PAP), and Carcinoembryonic antigen (CEA) were in the normal range.

A laparotomic exploration was performed, revealing a 25 × 25 × 30 mm cystic lesion of the right seminal vesicle. The cyst seemed to be filled with a thick liquid. No invasion to the prostate or to the rectum has been identified. Radical excision of the right seminal vesicle was done.

The opening of the right seminal vesicle and its cystic lesion on pathological gross examination revealed numerous papillary projections with the presence of a mucinous, thick liquid containing numerous tissular and necrotic debris.

Microscopic examination of the seminal vesicle wall revealed a carcinomatous proliferation made of papillae protruding into the seminal vesicle lumen and less numerous infiltrating tubes. The neoplastic cells have an abundant eosinophilic or clear mucin-filled cytoplasm, and the nuclei were markedly atypical showing numerous mitoses and frank atypia. No goblet cells or hobnail tumor cells have been identified (Fig. 2).

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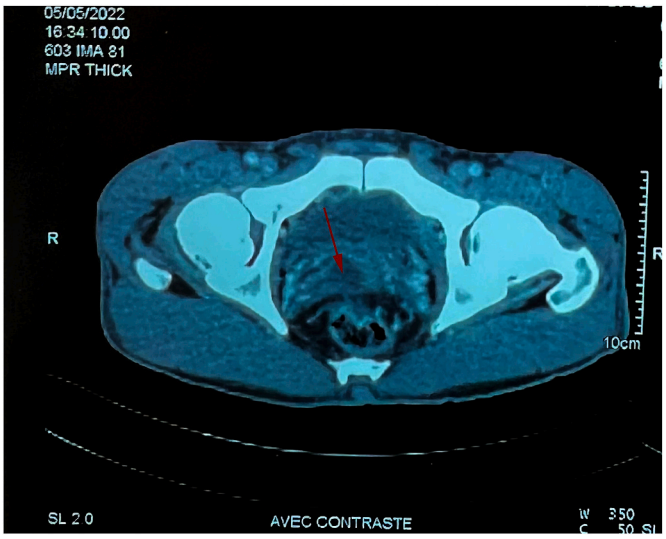

Fig. 1. Contrast-enhanced abdominal and pelvic computed tomography identifying a 25 × 22 mm, mildly enhanced cystic lesion (Red arrow) of the right seminal vesicle. No evident invasion of the seminal vesicle or any other surrounding organs could be identified.

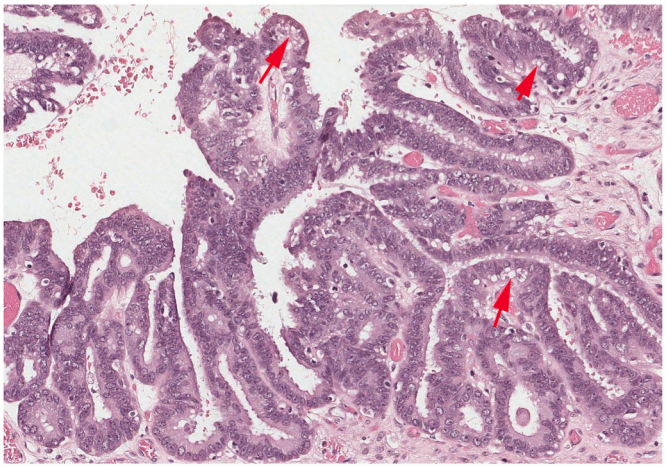

Fig. 2. Photomicrograph showing neoplastic cells with an abundant eosinophilic or clear mucin-filled cytoplasm (Red arrow). Nuclei were markedly atypical. No goblet cells or hobnail tumor cells have been identified. (HE, 200X).

Mucicarmine stain confirmed the mucinous nature of the liquid observed in the tumor cells' cytoplasm and in the seminal vesicle lumen (Fig. 3A).

An immunohistochemical study with anti-Ck7, anti-Ck20, anti-CA-125 and anti-PSA antibodies has been performed. It revealed a CK7-positive, CK20-negative, CA-125–positive, and PSA-negative proliferation (Fig. 3B and C).

The pathological report concluded to a primary mucinous adenocarcinoma of the right seminal vesicle and indicated a non-neoplastic resection margin.

Whole-body CT scan revealed no metastatic lesions. A colonoscopy was performed and found no rectal or colic lesion of the mucosa.

After resection, the follow-up will be made through CT and whole-body bone scanning.

3. Discussion

Primary malignancies of the seminal vesicles, such as adenocarcinomas are rare, in contrast to secondary extension of malignancies from surrounding organs, such as from the prostatic gland.[2]

Primary seminal vesicle adenocarcinoma is defined as a malignant gland-forming tumor originating from the seminal vesicle epithelium.[4] This entity classically occurs in old patients with an age over 50.[2]

In contrast to our reported case, the affected patients present with nonspecific symptoms in the late course of the disease.[5] They often present with hematuria urinary and obstruction, and rarely with haematospermia.[4] In our case, no urological symptoms have been reported.

The clinical examination may reveal a palpable, usually non-tender mass above the prostate.[2]

Imaging, including ultrasonography, PET-CT, and MRI can help define the lesion extent and exclude secondary invasion of the seminal vesicle from surrounding organs.[4]

Biological investigations can help orient the diagnosis, especially by excluding the prostatic nature of the mass. In our case, serum levels of PSA and PAP were in normal ranges. The serum CEA may be elevated.[1] In our case the serum CEA level was normal.

In the literature, we could find one case report of seminal vesicle carcinoma associated with kidney agenesis and ureteral ectopy.[2]

Another similar case of adenocarcinoma that has developed in a seminal vesicle cyst and was associated with ipsilateral renal agenesis without ureteral ectopy was reported by Okada et al.[1]

The seminal vesicles can be involved by other malignancies from surrounding organs. These malignancies include prostate adenocarcinoma, rectal carcinoma, lymphoma, and bladder carcinoma in situ. Consequently, the diagnosis of primary seminal vesicle carcinoma cannot be established with imaging alone and needs further explorations.

On gross examination, Seminal vesicle adenocarcinoma often takes the form of a cystic or solid lesion measuring 30–50 mm in diameter.[4] On microscopy, the seminal vesicle shows tubes, trabeculae, and papillae. Occasional hobnail tumor cells can be found. As in our case, mucin was present in cytoplasms, in the lumens of the tubes, and in the seminal vesicle lumen. This mucin secretion, with sometimes goblet cells, can be identified.[4]

On the immunohistochemical level, expression of CK7, PAX8, CEA, and CA125 has been reported.

Markers that should not be expressed are PSA, PAP, androgenic receptors, p63, GATA3, WT1, calretinin, and CDX2.[4] Radical surgical resection is the ideal treatment for seminal vesicle adenocarcinoma.[4] Chemotherapy is also an indicated therapeutic option. On the prognostic level, survival is usually less than 3 years from diagnosis.[4] Metastases have been reported especially in the lungs and the penis.[4]

4. Conclusion

Adenocarcinoma of the seminal vesicles is an extremely rare tumor, with a poor prognosis and survival usually less than 3 years from diagnosis. Many methods can be implicated in the diagnosis enabling the exclusion of secondary extension to the seminal vesicle from surrounding organs. These methods include imaging, biology, and pathological assessment, especially by means of immunohistochemistry.

Patient perspective

The patient was satisfied in terms of management.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Ethical approval

N/a.

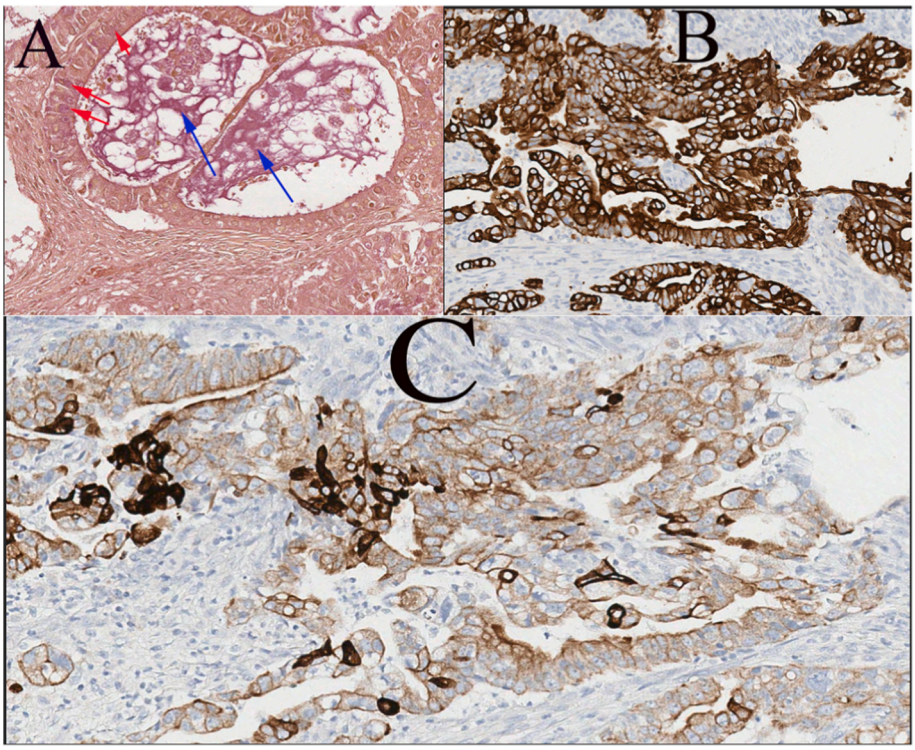

Fig. 3. (A) Mucicarmine stain confirmed the mucinous nature of the liquid observed in the tumor cells' cytoplasm (Red arrow) and in the tubes' lumens (Blue arrow). (B) Tumor cells were CK7-positive, and (C) CA-125–positive. CK20 and PSA were expressed by tumor cells.

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Consent

The patient has provided permission for the publication of this work.

Declaration of competing interest

The authors declared no potential conflicts of interests with respect to research, authorship and/or publication of the article.

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