



## Incidental splenosis discovered during robotic assisted radical prostatectomy: A case report

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### ABSTRACT

Splenosis refers to the benign heterotopic auto transplantation of splenic tissue that most commonly arises following traumatic rupture of the spleen. It is most often associated with traumatic rupture of the spleen. While often asymptomatic, splenosis can mimic malignancy and may lead to unnecessary biopsy, chemotherapy, and surgery. This case report highlights an instance of splenosis discovered incidentally during robotic assisted radical prostatectomy. Splenules were sent for frozen section due to concern for malignancy. Retrospective analysis of imaging obtained prior to the procedure was consistent with splenosis.

### 1. Introduction

Splenosis refers to the benign heterotopic auto transplantation of splenic tissue that most commonly arises following traumatic rupture of the spleen. It is estimated that splenosis occurs in up to 65% of patients with splenic rupture.<sup>1</sup> A history of elective splenectomy or splenic injury requiring splenectomy should raise suspicion for splenosis. The misplaced splenic tissue of splenosis seeds surrounding structures and can be found in any intraperitoneal or extraperitoneal location. Most commonly splenosis will be found in the peritoneum, omentum, and mesentery.<sup>1</sup> Splenosis rarely causes symptoms and thus often remains undetected until discovered incidentally on imaging or intraoperatively. When a diagnosis of splenosis is suspected, further workup is required to rule out malignancy.

We present a case report of a patient with remote history of splenectomy who was scheduled to undergo a robotic assisted radical prostatectomy. Intraoperatively, retroperitoneal masses near the seminal vesicles were discovered which raised concern for carcinomatosis. Frozen sections of these masses were sent for pathology and were identified as accessory splenic tissue.

### 2. Case presentation

A 57-year-old Caucasian man with past history of a splenectomy in 1982 was referred to a Urologic Oncology clinic in 2/22 for recently diagnosed stage T1c prostate cancer. His PSA was 3.4 as of 7/20, after which he opted to observe. His PSA then rose to 4.3 in 7/21. MRI prostate was ordered which revealed a 16mm left peripheral zone

PIRADS 5 lesion. Following the MRI, he underwent prostate biopsy in 1/22 which revealed high volume grade group 2–3 with Gleason 6–8 disease. Although the patient had a multiparametric prostate MRI performed prior to fusion biopsy, no lymphadenopathy or additional pelvic lesions were reported. Following shared decision making, a decision was made to proceed with robotic assisted radical prostatectomy (RARP) in 3/22. RARP began with a posterior dissection which is the standard practice of the operating surgeon. As the sigmoid colon and rectum were retracted to reveal the rectovesical space, bilateral cystic structures in the retrovesical space were identified (Fig. 1). The appearance of these masses was concerning for carcinomatosis and they were immediately adjacent to the seminal vesicles. This prompted us to send the identified masses for frozen section due to concern for carcinomatosis. It was concluded on frozen section that no evidence of prostatic carcinoma could be identified, although no conclusive diagnosis of the nature of these masses could be made. Final pathology of the prostate revealed pT3aN0 carcinoma. Final pathology revealed the accessory masses were consistent with accessory spleen or splenule with no evidence of lymphoproliferative disorder or metastatic carcinoma.

These findings prompted us to retrospectively review the MRI prostate where possible T2 hypo intense tissue was indeed identified near the seminal vesicles (Fig. 2). Coincidentally, a CT abdomen/pelvis was performed at an outside hospital to evaluate a renal mass and was unavailable to us at the time of his initial consultation. This CT was subsequently obtained and reviewed retrospectively. CTAP revealed multiple splenules in the LUQ and small enhancing nodules posterior to the upper right kidney adjacent to both seminal vesicles (Fig. 2).

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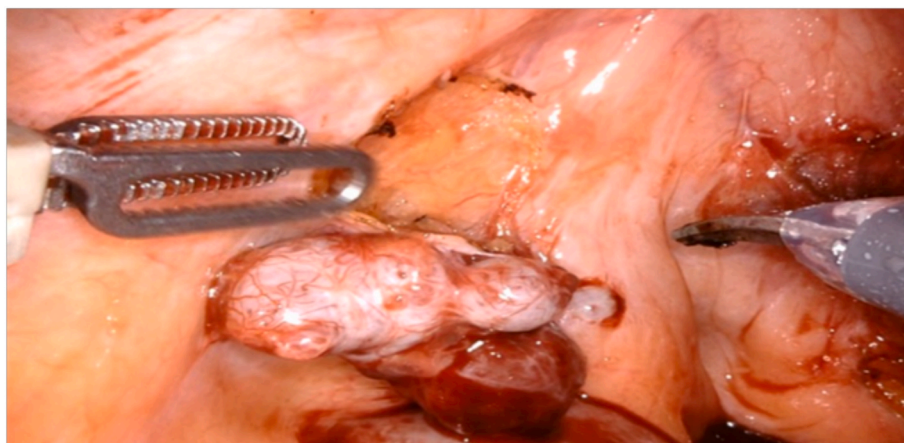


Fig. 1. Intraabdominal masses identified intraoperatively later identified as accessory splenic tissue.

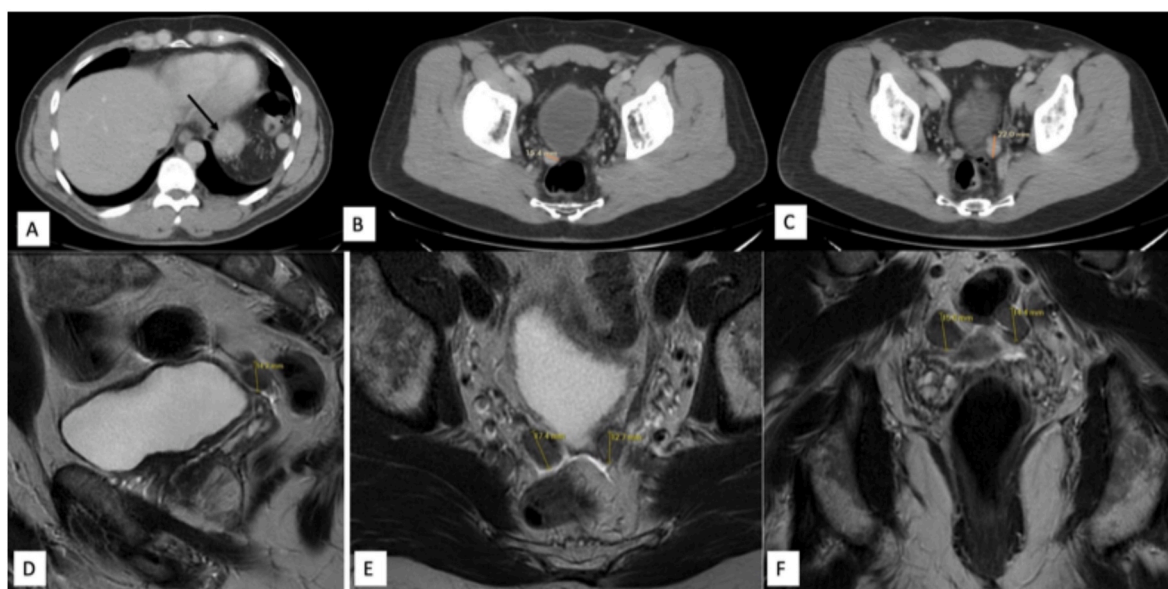


Fig. 2. CT Abdomen and Pelvis and MRI prostate images depicting splenules. A: CTAP axial demonstrating splenules in the LUQ B: CTAP axial demonstrating splenules in the LUQ B: CTAP axial demonstrating splenules near the R seminal vesicle C: CTAP axial demonstrating splenules near the L seminal vesicle D: MRI sagittal demonstrating splenules near the seminal vesicles E: MRI axial demonstrating splenules near the seminal vesicles F: MRI coronal demonstrating splenules near the seminal vesicles.

### 3. Discussion

There are a number of imaging modalities that can be used to diagnose splenosis. Nuclear scintigraphy is the preferred method of diagnosis. Historically this has been done with a sulfur colloid scintigraphy; however, research has suggested that use of Tc-99 m heat-damaged red blood cells is more sensitive and specific for splenic tissue.<sup>1</sup> The rationale behind this is the increased uptake by splenic tissue of damaged red blood cells over sulfur colloid. In our case, the patient had not undergone nuclear scintigraphy prior to surgery, so biopsy of the cystic structures were required in order to rule out malignancy. CT, MRI, and US can also detect splenules; however, splenosis can be more difficult to detect with these imaging modalities. On CT, these nodules have density and enhancement characteristics similar to the spleen.<sup>2</sup> On MRI, they demonstrate low to intermediate signal intensity on T1-weighted images, intermediate to high signal intensity on T2-weighted and restricted diffusion images. Signal characteristics and enhancement pattern are similar to normal splenic tissue.<sup>3</sup> Ultrasound will reveal solid round or oval-shaped masses with homogeneous

hypochoic echotexture.<sup>4</sup>

Clinician awareness of splenosis is important to avoid unnecessary biopsy, chemotherapy, and surgery in patients with splenosis whose nodules are mistaken for malignancy. There have been case reports of adrenalectomies and nephrectomies being performed as a result of splenules being mistaken for carcinoma, even despite advanced imaging.<sup>5</sup> This case report highlights an instance in which splenosis was discovered incidentally during surgery without prior knowledge of splenules on imaging. In this case, it was necessary to biopsy the lesions to rule out underlying metastatic disease.

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