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ENCOUNTERING ‘DROPPED’ GALLSTONES DURING ROBOTIC ASSISTED LAPAROSCOPIC RADICAL PROSTATECTOMY

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Abstract

We describe a case of an unusual finding during robotic-assisted laparoscopic radical prostatectomy and bilateral pelvic lymphadenectomy in a 66-year-old male with Stage IIb (T2c, N0, M0) prostate adenocarcinoma. During the operation, intraperitoneal examination of the rectovesical pouch revealed calcifications and stones which were subsequently identified as gallstones. While these stones were not noted initially on this patient’s preoperative multiparametric MRI (mpMRI), a retrospective review demonstrated hypointense foci in the rectovesical pouch. Here, we describe the first reported case of visualization of dropped gallstones on a prostate mpMRI and retrieval during robotic prostatectomy.

Keywords

‘dropped’ gallstones; peritoneal stones; robotic assisted laparoscopic radical prostatectomy; prostate adenocarcinoma

Case

66-year-old Caucasian male with a past history of laparoscopic cholecystectomy presented to the urology clinic due to an elevated PSA of 4.02 ng/mL. The patient underwent an MRI-TRUS fusion biopsy revealing Gleason 7 adenocarcinoma. The patient opted for robotic-assisted laparoscopic radical prostatectomy. Upon entry into the peritoneum, several subcentimeter, irregularly shaped, green/yellow stones were visualized in the rectovesical pouch (Figure 1). These stones were removed for pathologic analysis and were confirmed to be gallstones (Figure 2, a-d). These stones were likely “dropped” during the patient’s

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previous laparoscopic cholecystectomy. Patient had an uneventful postoperative course. On retrospective review of the patient's prostate multiparametric MRI (mpMRI), an area of hypointensity was identified on T2 weighted images in the rectovesical pouch where the dropped gallstones were seen intraoperatively (Figure 3).

The incidence of gallstone spillage, as a result of gallbladder perforation during surgical dissection and extraction, has been reported in 7-30% of laparoscopic cholecystectomy cases [2]. Complications from these stones have only been reported in 0.08-0.3% of patients [2]. However, dropped gallstones can contribute to misdiagnoses as they may have overlapping imaging features with peritoneal metastases, peritoneal loose bodies, colonic diverticulum or dropped appendicoliths [3]. After cholecystectomy, the presence of dropped gallstones should be communicated to patients and physicians to alert them to the possibility of future complications and reduce the risk of misinterpretation of subsequent imaging/surgical findings.

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Abbreviations

PSA	prostate-specific antigen.
MRI	magnetic resonance imaging.
TRUS	transrectal ultrasound.

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Figure 1.
Intraoperative view of the rectovesical pouch demonstrating multiple subcentimeter, irregularly shaped stones.

Figure 2.

Extracted gallstones. **(A)** Multiple grey, focally yellow, polygonal, smooth, and hard-to-cut stones were recovered. **(B)** A representatively bisected stone reveals a yellowish-brown brittle cut-surface with the characteristic appearance of a combined cholesterol and pigment gallstone (mixed- stone or combination stone [1]). **(C)** Histological sections confirm the presence of light- brown pigment consistent with bile pigment (top middle, hematoxylin-eosin stain, 20x magnification). **(D)** The stone was enclosed in a fibrous capsule (top right, H&E stain, 40x) which can be interpreted as the body's response to wall-off this 'foreign' material within the peritoneal cavity.

Figure 3.
Sagittal view of the multiparametric MRI (mpMRI) showing hypointense foci in the rectovesical pouch (arrow).