

Bloody otorrhea after robotically assisted laparoscopic prostatectomy

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Bilateral bloody otorrhea is a rare complication of surgery and to our knowledge a previously unpublished event. We review the case of a 50-year-old male who underwent robotic-assisted laparoscopic radical prostatectomy (RALP) with bilateral lymphadenectomy for Gleason's Score 4 + 4 = 8 prostate cancer. Bloody discharge from

bilateral auditory canals was noted upon removal of the surgical drapes. Otolaryngologic examination revealed bilateral anterior auditory canal hematomas without any loss of hearing. Steep Trendelenburg position in combination with perioperative anticoagulants may have contributed to this complication. Given the rarity of this event no specific risk factors are identified.

Key Words: otorrhea, prostatectomy, robotics, surgical complications, Trendelenburg

Introduction

Bilateral bloody otorrhea is a rare complication of surgery with no case reports thus far in the English literature. While this phenomenon is not well understood, sustained Trendelenburg position in combination with perioperative anticoagulants may increase bleeding risks for this rare complication.

Case report

This is a 50-year-old male without significant medical history noted to have an abnormal digital rectal exam and a PSA of 2.3 ng/mL. The patient's height, weight, and body mass index are 203 cm, 112 kg, and 27.1

respectively. He underwent a transrectal ultrasound and biopsy of the prostate revealing adenocarcinoma, Gleason's score 4 + 4 = 8 bilaterally with the majority of the disease present on the right side. His clinical stage was T2b with a palpable nodule on the right. His staging work up included a bone scan and CT scan which demonstrated no evidence of metastatic disease. He had no preoperative auditory problems, previous history of ear drainage, easy bruising, or problems with either auditory canal. Of note, he did report upper respiratory symptoms including nasal congestion and post-nasal drip a few days prior to his procedure.

He underwent a robotic-assisted laparoscopic radical prostatectomy (RALP) with bilateral lymphadenectomy. There was no concern intraop regarding atypical hemostasis. Upon waking up in the operating room, he was found to have approximately 20 cc-40 cc of dried blood clearly originating from the auditory canals bilaterally as soon as the surgical drapes were removed. Upon further examination, he

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had no evidence of facial edema or skin changes of the external ear. There was no difficulty to ventilate or extubate the patient and his vital signs remained stable throughout the case and afterwards. The patient had no gross hearing deficits upon waking. Otoscopic exam, performed by otolaryngology on postoperative day 1, revealed bilateral anterior auditory canal hematomas. Tympanic membranes and hearing were unaffected. Otherwise, his intra and postop course was uneventful and he was discharged on postoperative day 1 as per protocol. He was started on Ciprodex drops to prevent secondary bacterial infection of the auditory canals.

The etiology of his bilateral bloody otorrhea was deemed multifactorial. Likely his sustained Trendelenburg position in combination with periop anticoagulants may have increased his bleeding risk. His final pathology revealed Gleason 4 + 4 = 8, pT3a, N1, Mx with negative margins and 1/19 positive lymph nodes. The patient has been seen in follow up and reports no recurrent auditory canal drainage. He reports no problems with hearing. He denies tinnitus, vertigo, or headaches. From a prostate cancer perspective, his PSA has remained undetectable.

Discussion

The French literature reports rare occurrences of similar abnormalities during laparoscopic gynecologic procedures. Specifically a 28-year-old, 61 kg female who underwent hysterectomy was found upon waking to have facial edema, palpebral petechiae and left otorrhea. Moreover, a 75-year-old, 52 kg female who underwent hysterectomy was found to have right bloody otorrhea and hemotympanum 40 minutes after waking. During both cases, the pneumoperitoneum was set at 15 mmHg, Trendelenburg at 35 degrees, and duration was less than 60 minutes in length.¹ In contrast, the prostatectomy involves pneumoperitoneum set at 14-20 mmHg, Trendelenburg of approximately 30 degrees, and a case length of 150-180 minutes in length. Dr. Zagaja has performed more than 2000 prostatectomies and has never experienced a similar complication until this point.

The etiology of this rare occurrence is unclear. An unknown propensity for this problem preoperatively may have contributed. The patient received 5000 units of subcutaneous heparin for deep vein thrombosis prophylaxis preoperatively, increasing the risk of bleeding. The Trendelenburg position, increase in arterial CO₂ tension (PaCO₂) and pneumoperitoneum cause substantial changes in intra-abdominal pressure, intra-thoracic, and intracranial pressures. This may

affect the flow of blood in venous plexi of the head and neck and potentially increase the risk of this event.^{2,3} Kim et al used ultrasonographic measurement of optic nerve sheath diameter as a proxy for intracranial pressure during RALP. At 30 degrees Trendelenburg position, diameter increases corresponding to ICP values above 20 mm Hg did not result in neurologic complication.⁴ It remains unknown if increased ICP alone could precipitate an event of this type.

There have been case reports of bilateral otorrhea in other settings. For example, an agitated patient on CPAP with esophageal varices developed this problem, perhaps due to a transient, high pressure impulse.⁵

Bloody otorrhea is a rare complication of laparoscopic surgery; we present the first bilateral case to date in the urologic literature. Further study is needed to understand the incidence as well as associated risk factors. □

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