CASE REPORT

A rare aetiology for increased drain output following a robotic-assisted prostatectomy

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SUMMARY

Robotic prostatectomies are being performed increasingly, with greater visualisation and improved precision, resulting in fewer postoperative complications. Despite advances in surgical techniques, drain output still remains one of the first signs of potential complications. We present the case of an iatrogenic cause for high drain output postoperatively, in order to highlight the potential problems of the drain itself. A 69-year-old man presented with a pelvic drain output of over 2 L a day as a result of the drain tip being placed at the site of the anastomosis. Here we discuss the rates of the three main causes of increased drain outputs following robotic prostatectomy, as well as highlighting the resulting complications. Overall, this case highlights the potential complications arising from the drain, which could potentially be avoided by either routine evaluation of the drain position postoperatively or by omitting the drain entirely if the anastomosis is performed well.

BACKGROUND

Robotic prostatectomies are being performed increasingly due to improved visualisation and increased precision, resulting in fewer postoperative complications. However, despite advances in surgical techniques, the importance of monitoring postoperative drain output remains imperative, as this

can be one of the first signs of potential complications. We present an unusual aetiology for high drain output in a patient following robotic-assisted laparoscopic prostatectomy (RALP).

CASE PRESENTATION

A 69-year-old man underwent a radical RALP for prostate carcinoma grade pT2b with a Gleason score of 4+3. Postoperatively the patient had a high-drain output, producing over 2 L of fluid per day. Despite shortening the drain on two occasions, the high drain output persisted.

INVESTIGATIONS

A CT of the urinary tract with contrast was performed and revealed a small focus of extravasated contrast at the neck of the bladder anteriorly, and the tip of the surgical drain sitting at the anastomosis (figure 1).

DIFFERENTIAL DIAGNOSIS

There are three main causes of increased drain outputs following robotic prostatectomy—urinoma, lymphocele and anastomotic leak.

TREATMENT

The drain was repositioned away from the anastomosis and the output settled.

Figure 1 CT scan of abdomen and pelvis with contrast. Serial sections from (A to D) showing extravasation of contrast and the drain tip positioned at the anastomosis. (A) arrow shows extravasation of contrast into the pelvis. (B) arrow showing continued extravasation of contrast. (C) arrow shows extravasation of contrast with drain in centre. (D) arrow shows tip of the drain at the anastomosis.

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OUTCOME AND FOLLOW-UP

The patient made a full recovery postoperatively following repositioning of the drain and was discharged from hospital. The patient was followed up in urology outpatient clinics and has remained cancer free to date.

DISCUSSION

Prolonged urinary leakage is inadequately reported in the literature, and is often defined as prolonged drain output, urinary extravasation found on a cystogram or raised drain creatinine level.^{1–7} The incidence of prolonged urinary leakage is reported at rates of 0.67–10%.^{1–7}

Urinoma rates are not widely reported in the literature, and tend to be reported with urinary leakage, at rates of 2.4%.⁸ Anastomotic leakage has been reported in varying numbers of patients following RALP. Krambeck *et al*⁹ reported rates of 9.1% in RALP patients. Similar rates were reported by Guillonnet *et al*,² with a rate of 10% for anastomotic leakage in a report of 57 cases, with only three patients requiring intervention, one of which underwent a laparoscopic revision of the anastomosis and the other two had percutaneous aspirations. Higher rates were reported by Sukkarieh *et al*,¹⁰ who reported on 110 patients, 20% of which had anastomotic leaks following RALP, with increased drain times of 9.7 days compared with 1.8 days for patients without leaks. A large study by Coelho *et al*¹¹ reported on 2500 patients who underwent RALP, reporting rates of anastomotic leakage that varied with surgeon experience, but ranged from 0.3 to 4%. Ghazi *et al*¹² reported complications in 127 patients out of 1503 undergoing RALP, with anastomotic leak in 1.2%. Anastomotic leaks result in urine within the peritoneal cavity, which causes chemical and metabolic derangements leading to ileus, raised creatinine and prolonged hospital stays.¹⁰ Therefore, it is important to recognise these early in order to avoid subsequent complications.

Lymphoceles result from collection of lymphatic fluid following surgical dissection of the lymphatic vessels, mainly following pelvic lymph node dissection.¹³ They are one of the most frequent non-functional complications of radical prostatectomy.¹³ Although incidences are reported up to 27%, rates are again variable between studies.^{12–14} Although incidences can be high, lymphoceles are rarely symptomatic and few require intervention.¹⁴ For example, Khoder *et al*¹³ reported lymphoceles in up to 27% of patients, but these were only symptomatic in 2.4%. Similarly, Capitanio¹⁴ found rates up to 15%, but only 10% were symptomatic, with only 2% requiring intervention. Much lower rates were reported by Nelson *et al*,⁸ who assessed 629 cases of RALP, with a lymphocele rate of 0.3%.

This case highlights the importance of other causes of high drain outputs and the need to evaluate the drain position. Surgical drain position is not routinely evaluated postoperatively. However, this case highlights the importance of assessing drain position in order to avoid malpositioning and subsequent complications. Implementing routine imaging to confirm drain placement post-RALP would avoid iatrogenic complications and avoid the need for drain shortening in an attempt to reduce drain outputs. Furthermore, studies have suggested that drain placement post-RALP may not be necessary in all patients, or even at all. Araki *et al*¹⁵ assessed 552 cases of prostatectomy whereby they gently filled the bladder at the end of the surgery and if there was no leak, a drain was not placed. There was little difference in complication rates of patients with or without drains postoperatively.¹⁵ Furthermore, Sharma *et al*¹⁶ assessed patients post-RALP, in whom 90% had a drain omitted.

Recovery of continence and complications were similar with or without pelvic drains, with 11% of patients with a drain having complications, compared with 6% without a drain.¹⁶

Therefore, this case highlights the importance of post-operative imaging to confirm pelvic drain placement following RALP, as well as the possibility of omitting the drain if the anastomosis is performed well in order to avoid iatrogenic complications. All doctors should take care with drain placement and confirm by imaging where possible.

Learning points

- ▶ Surgical drain position is not routinely evaluated postoperatively.
- ▶ Malpositioning of the drain may lead to subsequent complications postoperatively, which could affect patient recovery.
- ▶ The main causes of increased drain output following robotic prostatectomy are urinoma, lymphocele or anastomotic leak.
- ▶ It may be possible to omit the drain if anastomosis is performed well, to avoid iatrogenic complications.

Contributors GB was involved in conceiving the case report. KH was involved in writing the case report. NV contributed by editing the manuscript.

Competing interests None.

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