Transurethral endoscopic-guided surgical repair of bladder rupture in a standing mare.

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Introduction

Bladder rupture and uroperitoneum can occur as a foaling complication. The clinical signs are non-specific and include dull mentation, loss of appetite, dehydration, mild colic, and progressive abdominal distension. While the diagnosis can be easily confirmed through a combination of diagnostic techniques (laboratory data, abdominal ultrasound, abdominocentesis, cystoscopy); effective treatment can be challenging. Conservative medical management has been described for small tears. However, larger tears require surgical treatment with several techniques described; including celiotomy, laparoscopy, and following bladder eversion per vaginum with blind closure of the bladder tear. This case report is the first description of a novel minimally invasive transurethral endoscopic-guided approach to successfully repair bladder tears in a standing mare.

Materials and methods

A six-year-old Thoroughbred mare presented to Scone Equine Hospital two days post foaling with a history of being obtunded with a poor appetite. Clinical findings included moderate dehydration, tachycardia and tachypnoea. Transabdominal ultrasonography identified a large volume of peritoneal fluid. Laboratory data identified azotaemia and electrolyte abnormalities including hyperkalaemia. Abdominocentesis yielded a peritoneal fluid sample with a creatinine concentration four times higher than the serum creatinine concentration. Cystoscopy confirmed the diagnosis of bladder rupture with three separate tears being evident.

Results

The mare was medically stabilised prior to surgery with intravenous fluid administration, abdominal drain placement, urinary catheter placement, broad-spectrum antibiotics, and non-steroidal anti-inflammatories. Following sedation and epidural administration, two of the three bladder tears were sutured via a transurethral endoscopic-guided approach with the aid of an automated articulating endoscopic suturing device (SILS™ Stitch); the third bladder tear was considered too superficial to necessitate surgical repair. The operative time was short (50 minutes). The peritoneal drain was maintained for one day post surgery and the indwelling urinary catheter for three days post surgery. Post-operative abdominal ultrasonography confirmed resolution of excessive peritoneal fluid and laboratory data identified resolution of azotaemia and electrolyte abnormalities. The mare had no complications following surgery and was discharged six days later. Cystoscopy 60 days post surgery identified complete healing of the bladder tears.

Relevance to clinical equine practice

This is the first description of a transurethral endoscopic-guided approach for the surgical correction of bladder tears in a mare. There are several advantages of this new technique; including avoidance of general anaesthesia, minimal tissue trauma, avoidance of an abdominal wall incision, excellent visualisation of the bladder tears, avoidance of the risk of excessive traction on the bladder leading to extension of a bladder tear, and shortened operative time relative to other surgical techniques. Disadvantages of this technique include the requirement for specialist surgical equipment, the need for experience in laparoscopic procedures, and the possible limitation of the technique for use in mares due to the wider urethral size relative to male horses and foals.

Declaration of interest

None declared.