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Case Report

Watermelon skiing with a melancholy outcome: massive haemoperitoneum secondary to traumatic rupture of a para-adnexal leiomyoma

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ABSTRACT

A 33-year-old woman sustained blunt abdominal trauma following a watermelon skiing accident in a rural location. She had massive haemoperitoneum and required transfer by helicopter to a level one trauma centre. At laparotomy, the cause of haemoperitoneum was found to be due to traumatic rupture of a para-adnexal leiomyoma. On review of the literature, this is the first reported case of traumatic haemoperitoneum from ruptured para-adnexal leiomyoma, and the first reported trauma associated injury from watermelon skiing.

Keywords: Watermelon skiing, Haemoperitoneum, Intraperitoneal haemorrhage, Blunt abdominal trauma, Leiomyoma

INTRODUCTION

The Chinchilla Melon Festival is a biennial event in the rural town of Chinchilla in Queensland, Australia. The festival hosts a variety of melon themed activities including watermelon skiing, melon bungee and melon ball games.[1] This case reports on the events following an episode of blunt abdominal trauma caused by a watermelon skiing accident, resulting in haemoperitoneum secondary to a ruptured para-adnexal leiomyoma.

Watermelon skiing requires the participant to wear watermelons on their feet that have been carved on the surface to admit the foot. The participant then holds onto a rope attached to a motor and is pulled across a tarpaulin which has been made slippery by applying crushed watermelon flesh. On review of the literature, this is the first reported case of traumatic haemoperitoneum due to a para-adnexal leiomyoma and additionally, the first reported watermelon skiing associated trauma.

CASE REPORT

A 33-year-old female in attendance at the Chinchilla Melon Festival, fell forwards landing onto her abdomen whilst watermelon skiing. She was then dragged in the prone position for approximately 10-15 metres. She was self-ambulant post injury and shortly after, had a witnessed syncopal episode. On waking, she complained of abdominal pain. She was attended by paramedics and brought by ambulance to the local rural 10-bed hospital for further assessment.

On arrival to hospital, she was tachycardic to 130bpm with a blood pressure of 110/70 mm Hg. She was pale, with cool peripheries and a prolonged capillary refill time of more than 3 seconds. Her Glasgow coma scale was 14 with eyes opening in response to voice. On examination, she had a tender, distended abdomen. A focused assessment with sonography for trauma (FAST) was positive, with an additional finding of a possible lower abdominal mass.

Her past medical history included dysmenorrhea and suspected endometriosis. Her menstrual cycle was usually regular every 4 weeks with 5-7 days of menses. However, she had noticed that her last 2 cycles had been 2 weeks longer each time. She did complain of abdominal bloating prior to menses and had noticed weight gain but thought this was secondary to inactivity during the COVID-19 lockdown period. She was day 1 of menses on the day of injury. She had never been pregnant and was not taking the oral contraceptive pill or any regular medications.

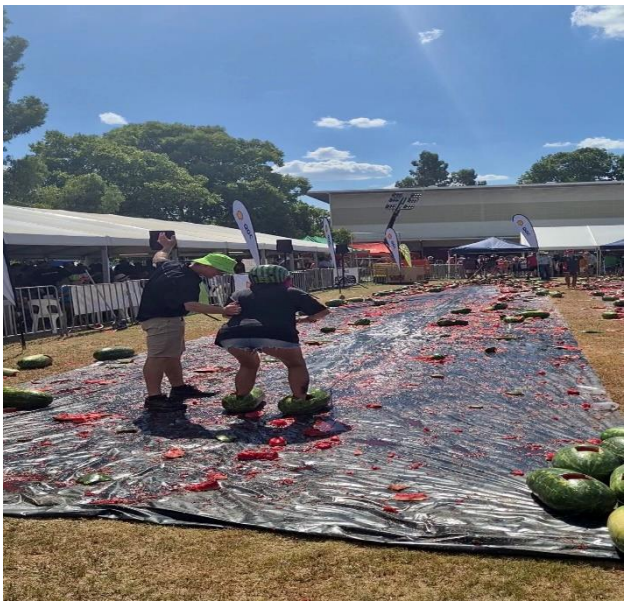

Figure 1: Picture provided by the patient, demonstrating watermelon skiing prior to the injury.

She was resuscitated with 2 litres of crystalloid intravenous fluids via two large bore cannulae. Results of a bedside point-of-care blood test showed anaemia and lactic acidosis with a haemoglobin of 75 g/l, pH of 7.30 and lactate of 5.1. Urine beta human chorionic gonadotropin (βHCG) was negative. Due to the concerns for intra-abdominal bleeding, the retrieval services were contacted to facilitate transfer to a hospital with surgical services. On their arrival, she had a transient episode of hypotension with a systolic blood pressure of 60 mm Hg, which responded to fluids. She received 1 gram of tranexamic acid intravenously, was catheterised, and transferred by helicopter to the level one trauma centre. She arrived approximately 6 hours post injury, at which time, she was found to be alert and orientated, with tachycardia to 116 bpm and a blood pressure of 129/69 mm Hg. The only positive finding on secondary survey was abdominal tenderness and distension. With a maintained blood pressure, she was deemed stable to proceed with computed tomography (CT) angiography of the abdomen, which was readily available.

Repeat haemoglobin was 66 g/l and CT angiography of the abdomen confirmed four-quadrant large volume haemoperitoneum. No active arterial bleeding was identified negating involvement of an interventional radiologist. A large heterogenous mass was found in the central pelvis, measuring 19.5 cm transversely, 12.5 cm anterior-posteriorly, and 19.5 cm craniocaudally. It was unclear whether this was uterine, adnexal or ovarian in origin. She commenced transfusion with packed red blood cells and proceeded to the operating theatre for a laparotomy.

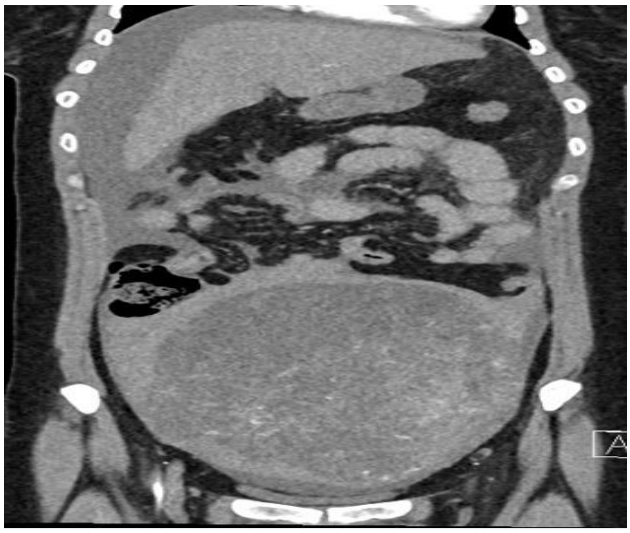

Figure 2: Coronal CT abdominal image showing four quadrant haemoperitoneum and a large mass arising from the pelvis.

A midline laparotomy was performed, with large volume haemoperitoneum encountered on entry. A large mass arising from the left adnexa was identified as the source of bleeding. On the anterior surface of the mass, a defect was identified suggestive of traumatic rupture with associated active bleeding. The large mass extended into the tissue plane between the rectum and the vaginal vault and was challenging to mobilise. Haemostasis was achieved by en bloc excision of the mass, left fallopian tube and ovary. No other injuries were identified on subsequent trauma laparotomy assessment. Following wash out of the abdominal cavity, a drain was placed, and mass closure was performed.

The patient had an estimated blood loss of 3 litres and received a total of 7 units of packed red blood cells. She was transferred to the ward and remained stable. Following a gradual diet upgrade, trial of void, and step down of analgesia, she was discharged day 4 post-operatively. On review in outpatients at day 8 post-operatively, she was continuing to recover well.

Histology results showed a 195×130×100 mm mass with a large 120×70 mm defect consistent with the site of traumatic rupture at operation. A second nodule on the mass measuring 90×50×45 mm was also noted to have an associated traumatic defect on the opposite side, measuring 90×70 mm. The ovary and fallopian tube were histologically normal. The mass was confirmed to be a benign para-adnexal leiomyoma.

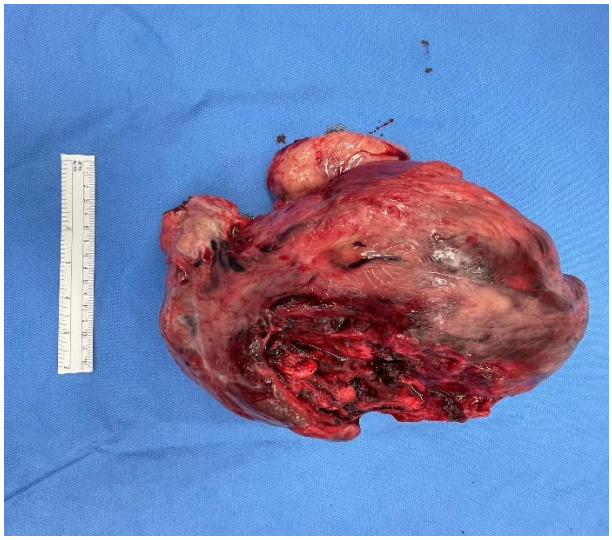

Figure 3: Pelvic mass with large central traumatic defect.

DISCUSSION

A leiomyoma (also known as a fibroid or myoma) is a benign neoplasm of uterine origin, composed of smooth muscle cells and fibroblasts of the myometrium. They occur in more than 70% of women and have a broad symptomology including menorrhagia, abdominal distension, pain, gastrointestinal upset, or may be asymptomatic. Despite their low mitotic index, leiomyoma can increase in volume by up to 138% in 6 months.[2]

The International Federation of Gynaecology and Obstetrics (FIGO) recognises eight subclasses of leiomyomas according to their location in relation to the myometrium. Broadly, they can be intramural, submucosal, subserosal or not related to the uterus. The para-adnexal leiomyoma described in this case corresponds with subclass 8 as it is not directly associated with the uterus, which is the most unusual type.[3] The origin of this type of leiomyoma is thought to be from a pedunculated subserosal leiomyoma which has become detached from the uterus and obtained its blood supply from an alternative neighbouring structure. They are also known as parasitic leiomyoma for this reason.[4] A systematic review identified 274 cases of patients diagnosed with parasitic leiomyoma and on analysis of associated clinical presentations, none had presented with haemoperitoneum.[4] An additional review of uterine leiomyomas associated with haemoperitoneum found only 19/125 cases were associated with trauma, demonstrating that even with more common types of leiomyomata, traumatic haemoperitoneum is rare.[5]

This unusual case presented several challenges. The first was the unusual mechanism of injury. There are no reported major traumas associated with watermelon skiing. The mode of injury initially did not raise suspicion for a major trauma event. On scene, the paramedics had presumed the patient had a syncopal episode due to dehydration, as it was a hot day. The patient complained of abdominal pain, but the mechanism of injury did not seem significant enough to have caused blunt abdominal trauma. After further assessment at the rural hospital with tachycardia to 130 bpm, positive FAST and concerning point-of -care blood test results showing anaemia and lactic acidosis, it became clear the patient had sustained a significant abdominal trauma. This presented new challenges for the local rural team and retrieval services to transport the patient to an appropriate facility in a timely and safe fashion. The decision to transfer the patient to a facility with availability of an interventional radiologist resulted in transfer to the level one trauma centre, which did not have gynaecology services on site posing further challenges for the treating general surgical team.

CONCLUSION

Bearing in mind the prevalence of leiomyomata in general, this case report serves as a reminder to consider alternate causes for haemoperitoneum in the blunt abdominal trauma patient and the additional challenges they may present.

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