

difficult history, the diagnosis can be more challenging. Small bowel obstruction as a result of adhesions from appendicitis has been commonly documented in literature. But mechanical small bowel obstruction caused directly as a result of acute appendicitis is rare. We present one of this rare and interesting presentation of appendicitis.

**Case description:** An 83-year-old gentleman presented to the surgical department with a 4-day vague history of abdominal pain associated with vomiting. He had not opened his bowels for a similar time period and also complained of abdominal distension. The patient had an unremarkable past surgical history, with no prior abdominal surgery. General examination showed he was dehydrated, exhausted and looked unwell. His pulse was 94/min, BP was 120/60mmHg and he was afebrile. His abdomen was markedly distended but soft and non-tender with sluggish bowel sounds. Abdominal x-Rays showed multiple loops of dilated small bowel suggestive of small bowel obstruction. Initially the patient was managed by intravenous fluid resuscitation, nasogastric tube insertion and urethral catheterisation. An arterial blood gas analysis showed significant metabolic acidosis with raised serum lactate and negative base excess. Routine bloods showed raised urea, creatinine and WCC. Despite rigorous resuscitation the patient's condition deteriorated, hence an emergency laparotomy was performed. At surgery loops of distended small bowel were identified extending proximally from the duodeno-jejunal junction to the distal ileum. At approximately 8cm from the ileo-caecal valve, a small appendix was noticed behind the transition point covered in a phlegmon and surrounding inflammation. A routine appendectomy was performed and the abdomen was closed after thorough wash out with normal saline. No other abnormality was noticed on laparotomy. Unfortunately the patients died a few days after the operation from pneumonia.

**Results and Conclusions:** Appendicitis is the second most common surgical abdominal pathology in people over 50yrs of age. The diagnosis in this age group is often delayed compared to the younger group due to a variety of reasons including difficult history and atypical and delayed presentation. In our case the cause of mechanical small bowel obstruction was noted to be due to inflamed small appendix and phlegmon lying behind the terminal ileum. Presumably the patient must have developed appendicitis a few days prior to presentation to the hospital. This delay had caused the development of phlegmon in which the appendix was found wrapped causing intestinal obstruction. Mechanical small bowel obstruction is recognized as short-term complication (ileus) and long-term adverse effect due to postoperative adhesion after appendectomy. In literature, appendicitis as a direct cause of small bowel obstruction has been discussed but without describing the position of the appendix and most cases were secondary to perforated appendices and associated peritonitis. Small bowel obstruction without previous surgery to the abdomen is acute surgical emergency and early judicious intervention is needed to improve the final outcome. This case is unique in its presentation of appendicitis and without any obvious signs making the pre-operative diagnosis difficult.

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## Impaired coronary arteriolar function after cardioplegic-ischemia/reperfusion in pig with metabolic syndrome

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**Introduction:** Metabolic syndrome (MetS) is associated with inactivation of coronary endothelial small/intermediate ( $SK_{Ca}/IK_{Ca}$ ) conductance calcium-activated potassium channels and dysregulation of coronary arteriolar endothelial function in animals and humans. We investigated the effects of cardioplegia-ischemia/reperfusion (I/R) and NS309 pretreatment

on the in-vitro coronary arteriolar responses to endothelium-dependent vasodilators substance P and ADP in pigs with or without MetS.

**Case description:** The MetS pigs were developed by feeding with a hyper-caloric, fat/cholesterol diet and the control animals fed with a regular diet for 12 weeks ( $n=8/\text{group}$ ). Coronary arterioles (90–180 micrometers in diameter) were dissected from the harvested left ventricle tissue sample of pigs with and without MetS. The changes in diameter were measured with video microscopy. Microvessel was perfused in the presence or absence of selective  $SK_{Ca}/IK_{Ca}$  activator NS309 ( $10^{-5}\text{M}$ ). The in-vitro coronary arterioles were then subjected to 60 minutes of cardioplegia-hypoxia ( $15^{\circ}\text{C}$ ) and 60 minutes of re-oxygenation.

**Results and Conclusions:** At the end of reperfusion, the microvessel was treated with the endothelium-dependent vasodilators substance P and ADP. The relaxation responses to the substance P and ADP after cardioplegia-I/R were significantly decreased in MetS vessels versus control (Lean), respectively ( $P < 0.05$ ), indicating MetS causes more impairment of endothelium-dependent-relaxation as compared with controls (Lean). Furthermore, pre-treating the MetS or control (lean) pig-microvessels with the  $SK_{Ca}/IK_{Ca}$  activator NS309 ( $10^{-5}\text{M}$ ) significantly improved the recovery of coronary endothelial function showing increased response to substance P and ADP as compared with no pretreatment alone ( $P < 0.05$ ), but this protective effect is more pronounced in lean-pigs than that of MetS pigs ( $P < 0.05$ ).

**Take home message:** This study demonstrates that cardioplegic-ischemia/reperfusion impairs endothelial function and inactivation of endothelial  $SK_{Ca}/IK_{Ca}$  channels of the coronary microcirculation in the setting of metabolic syndrome.

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## Successful laparoscopic cholecystectomy for giant gallstone using a 'double-bag' technique in an obese patient

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**Introduction:** We describe a case of successful laparoscopic cholecystectomy using a "double bag technique" to retrieve giant gall stone. Laparoscopic removal of gallstones within the gallbladder, larger than 5cm have rarely been reported in the literature.

**Case description:** A 44 year old woman presented to the outpatient surgical clinic with symptomatic gallstones. She otherwise had no other medical problems. However, her BMI was 40.9.

**Results and Conclusions:** Blood tests were within the normal range. Her ultrasound scan report showed 'many gallstones within the body of the gallbladder, the largest approximately 1cm'. During her laparoscopic cholecystectomy, a very large, 8cm gallstone was encountered in the fundus of the gallbladder.

The gallbladder wall was opened and the stone extracted and placed in the right paracolic gutter, adjacent to the liver. A standard laparoscopic cholecystectomy was then performed. The gallbladder and the 'giant stone' were extracted separately. The former via "Bert™ bag" 80ml capacity and latter via the "Anchor™ tissue retrieval system device TRS100SB2" 235ml capacity – using the "pack and push the envelope" technique.

**Take home message:** This case highlights that it is possible to retrieve a giant stone laparoscopically, without the need to convert to open procedure, using the above technique. It is important for the surgeon to be familiar with the various tissue retrieval systems available.

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