

A very rare complication of vesico-uterine fistula following lower segment caesarean section

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Introduction: Vesico-uterine fistula (VUF) is a recognised but rare complication following lower segment caesarean section with an incidence of less than 4% of all urogenital fistulae. Patients commonly present with urinary incontinence, cyclical haematuria, amenorrhoea, infertility and spontaneous first trimester abortions. Presentation can be immediate or delayed.

Case description: A 34-year-old lady presents with an eight-day history of continuous urinary leakage, following LSCS. She had the operation due to failure to progress during labour. She was discharged home after 2 days only to re-present. Speculum examination revealed drainage of clear fluid from the vagina. A vesico-vaginal fistula (VVF) was suspected and she underwent intravenous urogram (IVU) and CT abdomen and pelvis. Radiological findings revealed a suspected fistula but its precise anatomy was uncertain, hence a diagnosis was not made. She underwent examination under anaesthesia, cystoscopy, colposcopy and hysteroscopy, which revealed a small defect in the dome of the bladder and further advancement of the scope led to an entry into a second confined space – the uterus. Clearly there was communication between these spaces. A hysteroscopy revealed missing anterior aspect of the cervix, and proximal to this was the fistula. A urinary catheter was inserted and elective laparotomy planned in six weeks to allow for uterine involution. On the day of her operation, the patient reported cessation of urinary leakage and felt there was no significant vaginal discharge. The assumption was that her fistula had closed spontaneously. A formal cystogram was performed showing the presence of contrast within two cavities. Methylene blue dye was instilled into the bladder via the urinary catheter. Blue staining on the cervix end of the tampon confirmed a patent fistula tract. She underwent laparotomy where the bladder was bivalved to separate it from the anterior aspect of the uterus and cervix, the fistulous tract was excised, and the bladder repaired. An omental ‘tongue’ was placed as interposition between the uterus and the bladder. Her post-operative recovery was uneventful and she was discharged home. On review 6 weeks post-operatively, she had made a full recovery with no further urinary leakage.

Results and Conclusions: VUF is an unusual complication of LCSC, and presentation is very variable, from frank urinary leakage to vaginal discharge. What makes it unique is a competent cervix, which closes and allows urine to be trapped in to the uterus. This creates the variability of the intensity of discharge - if at all and other non-specific presentation as previously alluded to. A high index of suspicion is therefore required to make this diagnosis, as cystograms may not necessarily fill the uterus, especially if already involuted. For the same reasons, VUF may present early following caesarean section or as a delayed presentation several years later. Patients may not necessarily present with urinary leakage.

Take home message: A double ring overlap should be looked for, in cystograms, and lateral views must be obtained. A methylene blue test can be helpful if carefully conducted. A pelvic ‘scopy’ – cystoscopy, hysteroscopy and colposcopy are part of required armamentarium in making a diagnosis. CT and MRI scans could also be employed. Once a diagnosis is made, repairs of VUF is similar to VVF.

<http://dx.doi.org/10.1016/j.nhccr.2017.10.020>

An unusual case of spontaneous pneumomediastinum: Case report

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Introduction: Spontaneous pneumomediastinum (SPM) is rare, with an incidence of 1/25,000. It is defined as extra luminal free air within the mediastinum, not associated with trauma. A classic clinical triad consists of pleuritic chest pain, dyspnoea and subcutaneous emphysema. SPM is self-limiting and symptoms can be managed conservatively. However despite a good prognosis, secondary causes should be excluded.

Case description: Miss AG, 27 year old with a known history of Ulcerative Colitis being treated with azathioprine and adalimumab, presented to the ED with a two week history of progressively worsening shortness of breath and left sided pleuritic chest pain. She reported a 3 day h/o ongoing fever, rigors for which she was being treated with Amoxicillin 500mg tds. The patient had no previous history of respiratory conditions and was a non-smoker. The patient saturated at 96% on 2L of Oxygen with a respiratory rate of 19. She was afebrile, normotensive and acyanotic. Clinical findings on auscultation revealed left sided bronchial breathing, an erect postero-anterior chest x-ray revealed dense opacification throughout the left mid and lower zone. As she was increasingly symptomatic, she went onto have a CTPA, which showed a pneumomediastinum. A discussion with the thoracic surgeons followed and an urgent CT thorax and abdomen with oral gastrografin was carried out to exclude oesophageal perforation. This scan did not reveal any extravasation of contrast around the oesophagus to suggest a perforation or a leak. The patient improved clinically, discharged in 6 days, she was kept nil by mouth for 48 hours once the CT had confirmed that there was no perforation.

Results and Conclusions: SPM usually has a benign and favourable clinical course and is usually self-limiting. It is more commonly seen in young men. The pathophysiological process behind SPM was initially described by Macklin in 1944, who described a rupture of the terminal alveoli, secondary to pressure differences across the alveolar membrane causing air to leak into the lung interstitium and consequently into the mediastinum. In a retrospective study by Park et al., 44% of the patients had a precipitating factor, with the most common being cough.

Literature suggests that the most common symptoms reported in cases are usually chest pain, which is usually pleuritic in nature and dyspnoea. Subcutaneous emphysema is also reported as common clinical sign and has a frequency ranging from 40% to 100% in cases. Moreover, the characteristic sign of systolic crackles on auscultation known as Hamman’s sign can also be heard in 30% of cases. Diagnosis in this case was made based on the CTPA though it is more commonly based on chest x-ray findings. Postero-anterior view establishes the diagnosis in about two-thirds of patients with the three commonest findings: air streaks in the superior mediastinum, prominent left sided silhouette of the heart and subcutaneous emphysema of the neck and shoulder. For this reason, a chest CT scan is a more conclusive and sensitive scan, which is considered the gold standard investigation for SPM. More importantly, a CT scan with an oral contrast, as in this case, will allow us to distinguish between secondary causes of a SPM such as an oesophageal leak or rupture. The prognosis is good and treatment is mainly conservative for those diagnosed. The average clinical course, reported in the retrospective study by Takada et al. was 1.8 days after diagnosis, with an average of 7.8 day of

hospitalization. Complications such as hypertensive pneumomediastinum, pneumopericardium, and mediastinitis can occur and patients should be monitored throughout their admission.

Take home message: In conclusion, spontaneous pneumomediastinum is a rare condition, and is known to have a favourable clinical course, with symptoms of pleuritic chest pain and dyspnoea improving within a few days. Chest CT is the gold standard radiological investigation to confirm diagnosis whereby measures must be taken to exclude secondary causes of SPM. Patients can be treated conservatively and must be monitored for life threatening complications.

<http://dx.doi.org/10.1016/j.nhccr.2017.10.021>

Successful multi-disciplinary management of a 24 year old pregnant woman with necrotising fasciitis of the forearm

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Introduction: Necrotising fasciitis is a relatively uncommon but rapidly progressive soft tissue infection. The incidence is 0.24–0.4 per 100,000.¹ This condition requires urgent aggressive surgical debridement and broad-spectrum antibiotics. Mortality from this condition has been quoted to be from 6–76%.² Sepsis can cause pre-term labour, fetal infection, and preterm delivery. The prevention of these complications is through early recognition and targeted therapy. This should include aggressive rehydration and broad-spectrum antibiotics, with an emphasis on stabilisation of the mother as a priority, as in doing so the foetal status will likewise improve.³

Case description: A 24-year-old woman who was 24 weeks pregnant presented to the emergency department with septic shock. She had injured the tip of her right elbow four days previously, causing a 0.5cm laceration which was now discharging pus. Her initial blood pressure was 84/43mmHg, heart rate 110 beat per minute, serum C-reactive protein (CRP) was 392mg/L, and white cell count (WCC) $32 \times 10^9/L$. She was initially given fluid resuscitation, and broad spectrum IV antibiotics. Through prompt coordinated prioritisation of the multi-disciplinary team, this lady was taken to theatre for prompt debridement. We found dirty dishwasher fluid, and pus above the fascial layer up to the wrist. She improved dramatically after this.

Results and Conclusions: We have presented a case of necrotising fasciitis in a 24 year old pregnant woman whom had extremely early broad spectrum antibiotics and radical surgical debridement. We feel this lady was prioritised by several teams and her efficient, early, coordinated management led to an excellent outcome for both mother and child. Necrotising fasciitis is an uncommon condition with a high morbidity and mortality. Our patient had no risk factors for necrotising fasciitis aside from pregnancy. This may imply as McHenry⁴ suggests, that pregnancy itself may cause an immunosuppressive state enough for it to be considered a risk factor for the disease.

Take home message:

- Necrotising fasciitis/necrotising soft tissue infection is a clinical diagnosis.
- Management in pregnancy is the same.
- Management includes broad spectrum antibiotics and very early aggressive surgical debridement.
- Senior surgical input should be sought early.
- This is very rare in pregnancy and there are no reported upper limb cases of necrotising fasciitis.

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<http://dx.doi.org/10.1016/j.nhccr.2017.10.022>

Time from recognition of sepsis to treatment - A 2-month retrospective study of compliance of IV antibiotics at Queen's Hospital Burton

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Introduction: Sepsis is the presence (probable or documented) of infection. With its systemic manifestations of severe sepsis and septic shock posing a major healthcare burden in the UK and globally, there is clearly a potential for physician and patient awareness. Current evidence suggests that administration of appropriate antibiotic therapy within 1 hour on recognition of sepsis and its sequelae improves mortality rates among patients. In the UK, the National Institute of Clinical Excellence (NICE) and The Surviving Sepsis Campaign (SSC) recommends the use of intravenous antibiotics within the first hour of recognition of sepsis.

Case description: To determine the number of patients receiving their antibiotics within 1 hour from recognition of sepsis and to assess compliance of Queen's Hospital Burton Trust (QHBT) with the NICE and Surviving Sepsis Campaign's recommendation for early antibiotic therapy. A 2-month retrospective chart analysis was conducted to determine the interval from documented onset of sepsis to initial administration of antibiotic for patients at QHBT. Inclusion criteria included patients presenting to Accident and Emergency aged 16 and over scoring 4 or more on their NEWS (National Early Warning Chart Scoring) chart. Patients presenting to a paediatric and gynaecological/obstetric setting were excluded. Patients started on antibiotics at the GP were also excluded.

Results and Conclusions: Charts of 82 patients with documented sepsis were reviewed. 51 patients received their antibiotics within 1 hour representing 62% of all patients presenting to Accident and Emergency at QHBT over the 2 months period. At QHBT, over the 2-month period, very few patients receiving their antibiotics within 1 hour. Therefore, the administration of antibiotics in 38% of all patients exceeded the 1 hour period recommended by NICE and Surviving Sepsis Campaign guidelines. These results have been used as a baseline for future quality assurance and improvement initiatives aimed at minimizing the time to antibiotic administration for this group of patients, who are at high risk of death. Data have been shared with physicians, allied health professionals and patient groups at board meetings. A re-audit is in process with initial results looking promising.

<http://dx.doi.org/10.1016/j.nhccr.2017.10.023>