

3. Make sure arrangements are made promptly for the continuing care of the patient and pass on the patient's records without delay.
4. Be prepared to justify your decision.

CONCLUSION

We are constantly reminded as clinicians to maintain a professional boundary with our patients. Although rare we are informed or talk about strategies in dealing with advances from the patient's side, such advances can hamper the reputation of a doctor and put their medical practice at risk. Here I have outlined some strategies to integrate within our practice, in order to avoid potential medico-

legal proceedings. Medical educationists should consider developing workshops to better prepare clinicians for such scenarios. It would be of interest to hear from readers about similar experiences, comments, opinions and views.

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Toxic Shock Syndrome: Case Report

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SUMMARY

The case report focuses on a case that the author saw in winter 2016. It focuses on a case of a young lady who presented with profound sepsis. Initially thought to have a tropical medicine aetiology, as the patient had recently visited Latin America, on further examination of the patient it was found that an old tampon was the cause. A diagnosis of toxic shock syndrome was then made. This case will discuss toxic shock syndrome in more detail.

BACKGROUND

We are well versed in hospitals of being told to think about sepsis. There have been numerous campaigns trying to assist clinicians in making the diagnosis early and the importance of this.¹ However, clinicians may not always be aware of the more severe forms of sepsis. The author himself was not aware of toxic shock syndrome until he encountered this particular patient.

Toxic shock syndrome is a toxin mediated life-threatening ailment. It is usually mediated by *Staphylococcus aureus* or group A streptococcus, sometimes call *Streptococcus pyogenes*.² Thankfully it is rare with an incidence of 1.5-5.2 cases per 100,000 annually.³ Toxic shock has often been associated with tampon use. Though it is true that tampon use is a recognised risk factor, it was actually first described in children in 1978.⁴ Indeed 50% of cases are not associated with menstruation.

The basic pathophysiology is that the toxins involved in toxic shock syndrome produce super antigens. Whilst normal antigens only activate 0.01% of the T cell population, super antigens activate around 5-30% of the T cell population. The effect of this is a large production of cytokines that in turn mediate shock and tissue injury.⁵ As this case report shall show, the patient was significantly unwell and it is hoped that by reading this article, physicians will be more aware of this life-threatening condition.

CASE PRESENTATION

On a busy winter day a lady in her 20's was seen in an overflowing resuscitation department at a district general hospital in the North of England. She had been brought in by her partner with the complaint of headache, fever and diarrhoea. The symptoms had been ongoing for two days. Her partner had become increasingly concerned about the patient due to her decreasing levels of consciousness. No one else in the shared house where the patient lived was unwell.

Past medical history included scoliosis but nil else of note. There was no documentation of the patient having been admitted to the current hospital previously. No surgical history of note was elicited.

Social history included that the patient was a social sciences student who had two months ago come back from an expedition in Central America. There was no history of narcotic use or tobacco use. Alcohol use was occasional and there was no history of recent alcohol consumption. Drug history included the oral contraceptive pill but nothing else, with a documented allergy to amoxicillin.

Unfortunately, the patient was not communicative enough to give a full family history, but there was no mention of anything sinister in the family history.

INVESTIGATION AND EXAMINATION

On examination the patient's airway was patent; there was good air entry throughout the lungs, although the respiratory rate was 40 and oxygen saturation 97% on room air. Blood pressure was 87/32 after 1.5L of IV fluids with a sinus pulse of 116. Heart sounds were normal and an ECG showed a sinus tachycardia.

Neurologically the patient had a GCS of 14/15 E5 M6. Blood sugar was 7.1. Due to the patient's rather drowsy state a full intensive neurological exam was not possible. However, planters were down going, no photophobia could be elicited and no neck stiffness was found. Power was also 5/5 all 4 limbs.

Abdominal examination showed that the abdomen was soft but with some slight suprapubic tenderness. A blanching rash was also noted across the abdomen. It should be noted that the patient was pyrexial at 38.7.

Vaginal examination showed an offensive aroma with an old tampon found inside (the apparent source of the toxic shock infection).

Investigation wise the chest X ray was clear. A CT head had been ordered but not performed due to the fact that the patient was deemed too unstable. Her blood tests showed the following: lactate 4.5, INR 1.5, Hb 142, WCC 10.4, platelets 64, MCV 82.2, neutrophils 9.8, amylase 75, CRP 304.9, ALT 83, AlkPhos 31, GGT 49, albumin 34, bilirubin 59, sodium 126, K⁺ 2.9, urea 24.2, creatinine 455, egfr 11, magnesium 0.45, calcium adjusted 1.92.

DIFFERENTIAL DIAGNOSIS

When this patient was seen by the medical staff it was initially thought that she was suffering from meningitis; because of this the patient was initially treated with ceftriaxone to cover for meningitis. Due to her travel history of having visited Central America an infectious diseases consultation was sought and they had advised to consider HIV and malaria in our differential diagnosis.

TREATMENT

This patient was discussed with the on-call microbiologist who advised the following treatment regime: acyclovir (to cover for viral meningitis); teicoplanin and clindamycin. This was considered sufficiently broad spectrum enough for any bacterial meningitis and any occult source of sepsis.

The patient was given IV fluid resuscitation, at the behest of the Intensive Treatment Unit (ITU) doctor we catheterised the patient only to find an old tampon sitting in the vagina. It quickly became apparent that this old tampon may have been the source of infection all along. This was sent as a sample to microbiology (where it grew staphylococcus aureus).

As the patient was deemed sufficiently unwell, she was sent to ITU for a period of treatment. Thankfully the removal of the tampon, coupled with IV fluids and antibiotics allowed the patient to make a full recovery.

OUTCOME AND FOLLOW UP

Thankfully the patient made a complete recovery and was discharged from ITU. No follow up was needed due to the patient's rapid recovery- as is often the case with young people. The patient did vow though not to utilise tampons again.

DISCUSSION

This case highlights the importance of examination when presented with an acutely unwell patient. On first glance at the case, the fact that the patient was a student and had been away to Central America could easily lead a doctor astray in to thinking of some exotic disease such as malaria or encephalitis. However, one must always fully examine the patient with a reduced conscious level. Toxic shock syndrome is rare, particularly now as long acting tampons

have been removed from the market, however, in a female of child bearing age it should never be forgotten about as a differential diagnosis. A good A to E approach will help even the most experienced clinician assess the patient to make sure they don't miss anything. It is also a good case to highlight how you should always keep your mind open to other possibilities, many of us make the dangerous decision of going down one path and suffering from tunnel vision with regards to other differentials. Had this patient continued to be treated as meningitis, as she was initially thought to have had, she would most likely not have continued to survive.

LEARNING POINTS AND TAKE HOME MESSAGE

- A thorough examination in your acutely unwell patient will always be valuable in assisting your diagnosis
- Remember to check all orifices in your sepsis of unknown origin patients
- Do not develop tunnel vision with regards to differential diagnosis
- When in doubt ask for help.

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