

Fatalities Avoidable with Antibiotics

The problem of antibiotic misuse and emergence of antibiotic-resistant bacteria has been around for several decades and strict dispensing of antibiotics by doctor's prescription, and only after microbiological sensitivity studies, particularly in hospital settings, was introduced early especially in north European countries such as the UK.

However, withholding antibiotic use pending identification of the infective agent involved and its antibiotic sensitivity profile may sometimes result in unwanted serious, even fatal, consequences. Here are some cases that came to my personal attention in the UK Coroner's investigations and also, two cases in Malta.

UK CASES

A previously healthy 33 year-old Englishman was suffering from flu-like symptoms, with cough and pyrexia, and his wife phoned their GP and her husband was prescribed paracetamol. Two days later he's worse, can hardly walk to the bathroom and his wife phones the GP again, who demands that her husband is referred to hospital. He dies soon after arriving at the emergency department. At the Coroner's autopsy his lungs were extremely congested and swabs from the lungs and pulmonary trunk blood grew pure cultures of *Streptococcus pneumoniae*. Diagnosis: septic shock from acute bacterial pneumonia.

A 9 year-old English girl returns from school feeling unwell and complaining of some tummy ache. She is feverish and her mother calls this young GP who attends and notes a soft non-tender tummy, is unsure of the diagnosis, recommends a "flu" anti-inflammatory oral medication and says he'll visit again next day. In the morning the mother finds her daughter dead in bed. The Coroner's autopsy finds a right lower lobar pneumonia with some purulent pleurisy and swabs from this lobe and from pulmonary trunk blood grew pure cultures of *Streptococcus pneumoniae*. Right pleural inflammatory irritation of the tenth intercostal nerve explained the referred pain around the umbilicus - the abdominal contents were normal. Cause of death: septic shock from acute bacterial pneumonia.

A 55-year-old menopausal English woman visits her GP surgery because of a very recent brownish vaginal discharge, is feeling a little unwell with some discomfort in the outer aspect of her left leg. A cervical smear is taken and she is given some paracetamol. Next day she deteriorates rapidly and dies at home. At autopsy there

is little of note apart from a vague skin discolouration on the outer aspect of the left calf and lower leg. However, swabs from the uterine cavity, subcutaneous tissue of the outer aspect of the left leg, and from pulmonary trunk blood, all grow pure cultures of group A *Streptococcus pyogenes*. Cause of death: septic shock due to *Streptococcal* infection including erysipelas.

An English teenaged boy develops a sore throat and after it persists for a few days a visit to the GP surgery recommended a simple analgesic as it must have been presumed to be of viral aetiology. The sore throat persists and he misses school for at least three weeks. There is history of his urine getting pinkish or dark and a decreasing need to urinate. He is eventually found dead at home. He lived with his single mother in a somewhat deprived area of the town. The main findings at post-mortem were swollen pale kidneys and a swab from his tonsils later identified a group A β -haemolytic streptococcus. Kidneys are normally congested at autopsy due to terminal cardiovascular failure but they are notably pale in death due to fatal bleeding (hypovolaemic shock) or in some types of acute glomerular disease. In this case the cause of death was acute renal failure due to post-streptococcal glomerulonephritis.

A Royal Marsden Hospital patient, an Englishman in his late sixties, previously treated for high grade lymphoma, is admitted because he's been recently unwell and tumour recurrence is suspected. He is feverish and has a cough but before investigations are carried out and results known, he dies less than 24 hours after admission. At autopsy no recurrent tumour could be found and his lungs are congested and bronchi are full of purulent secretions. Cause of death: bronchopneumonia.

MALTESE CASES

A 10-year-old Maltese boy first complains of a sore throat and after a couple of days develops abdominal pain. The family doctor fears this might be appendicitis and refers him to St Luke's Hospital. A consultant surgeon removes a grossly unremarkable appendix (later also reported as uninfamed by the laboratory) and also notes unremarkable abdominal contents. However, the boy doesn't make the usual speedy recovery after surgery. It happens to be a long holiday weekend and his consultant has gone on vacation leave. His general condition deteriorates and pus is noted exuding from

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the abdominal wound. He is eventually seen by a duty senior surgical registrar who takes him back to theatre and finds he has a purulent generalised peritonitis. The boy dies soon after. I was not directly involved with this case but what I know about it came from Professor Paul Cuschieri of the microbiology department and letters in the Malta Sunday Times.

The boy's parents were obviously distraught and took to the letters column of The Sunday Times insinuating, more than once, that some fault in the consultant's surgical technique, before leaving on holiday, was responsible for their son's tragic death. Perhaps foolhardily I took it upon myself to answer the parents' letters in the paper. I explained their son's case was a rarity and could have easily fooled any doctor. The microbiologist had confirmed with me that autopsy swabs from the boy's throat and peritoneal pus all grew the same type of streptococcus. So, streptococcus from the throat had found its way to the peritoneal cavity via the bloodstream, just as meningococcus finds its way from the nose or pharynx, via the bloodstream, to the meninges. I have also seen Klebsiella from an inflamed urinary bladder find its way to the meninges and causing death by purulent meningitis. In this boy's case whether appropriate type, timing and dosage of antibiotic had been used remained unclear as far as I could gather.

The medical defence lawyer acting for the consultant surgeon later thanked me for the help offered via the Sunday paper.

A 16-year-old Maltese girl develops a severe frontal headache. Because she doesn't normally suffer from headaches her mother calls their GP who diagnoses frontal sinus pain and recommends paracetamol. Next day she's feeling worse, then says she's seeing double, so her mother takes her to Mater Dei where an emergency department house office also diagnoses frontal sinus pain and advises to continue with paracetamol. No investigations are carried and no more senior doctor is consulted before discharging her. The following day the girl falls into a coma and dies soon after emergency admission to hospital. Before she dies a scan reveals thrombosis of major intracranial cerebral veins. Presumably an infective agent from the sinus found its

way intracranially. No autopsy was carried out. Her mother was a senior scientist at one of private laboratories I worked in. She was devastated by this tragic loss of her only daughter. When she recovered somewhat after a few months she asked me how to go about getting some form of redress from the hospital for what she regarded had been seriously inadequate medical attention contributing to her daughter's death. I recommended a lady lawyer with an interest in medical litigation and passed on the case to Dr Anthony Galea Debono. The health service and parents eventually settled outside court.

Readers may wonder how come some of the above UK cases could be allowed to happen by a reasonably competent primary healthcare system. Modern GP surgeries in UK are very similar to Malta's health centres. You would not normally expect home visits by your GP and you would normally need to book an appointment to visit the surgery. Some of the above cases are medical rarities and can be expected to fool even experienced doctors. However, it's hard not to admit that the now heavily censured immediate "blunderbuss" use of antibiotics may not have saved some of these lives.

The Coroner's Court in England is an old institution whose main purpose is to establish the events leading to death and to provide that information to close relatives. Family doctors cannot sign death certificates of patients they haven't examined two weeks before death and hospital doctors cannot either do that for patients dying shortly after hospital admission or after an operative procedure. In these circumstances doctors need to inform the Coroner's office which may order an autopsy and open a Coroner's Inquest.

