Emergency Medicine Casebook

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Body packing

Early one morning, the police brought a man to A&E. They suspected him of being an international drug smuggler and to have swallowed a few packets of 'white powder' prior to attempting to go overseas from the airport. The police requested that you gave him something to drink to make him vomit so that they could recover the swallowed drugs.

Q1 *Should you give this man an emetic?*

Q2 *What complications would you expect in this case?*

Q3 *How would you manage this case?*

ANSWERS

1. The use of emetics in this situation is not recommended. It is unwise to give an emetic as you do not know what kind of drug and what quantity has been swallowed. There is no guarantee that the packets will not rupture during transit through the gastrointestinal tract. Moreover, there is always a risk of aspiration.

2. Intestinal obstruction and drug intoxication.

3. Body packers may be brought to A&E for various reasons. The principle of management is the same as with any other condition:

(a) Resuscitate if there are complications, especially drug intoxication.
(b) Obtain consent for examination from the patient, including consent for PR or PV (in females) examination.
(c) Note from the case history the type of drug that has been swallowed, the quantity and the packaging.

(d) At the physical examination, look for any signs of intestinal obstruction and drug toxicity. Be aware that body packers may ingest a combination of drugs. For instance, cocaine smugglers may also take benzodiazepines to avoid getting 'high' if the cocaine package leaks.

(e) Do blood tests as necessary, including a toxicology screen. Plain radiographs may be ordered, although they have limited success in identifying drug packages. The false-negative rate varies from 1.2% to 33%. Ultrasonography is not useful. Contrast studies of the bowel and CT scan are the most useful in package identification.

(f) For asymptomatic individuals, a gentle aperient may be tried, but the patient should be monitored closely in case the package ruptures. Stimulant laxatives are contraindicated. Endoscopic removal is also not recommended because the risk of inadvertent puncture of the package is high. Surgical removal is indicated if complications develop, a large amount of highly toxic drugs have been ingested or the package fails to progress through the bowel satisfactorily.

Point to ponder: Apart from the presentation described in this case, in what other ways can body packers present?

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Horrocks AW. Abdominal radiography in suspected body packers. *Clin Radiol* 1992; 45: 322-–5.

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Cardiac tamponade

A 30-year-old woman presented to A&E complaining of dyspnoea. She had been in previous good health and was not taking any regular medication. Her history of dyspnoea went back about a month when she first noticed that her exercise tolerance was decreasing. She became breathless on climbing two or three flights of stairs. Her condition progressed rapidly within a few days. When the emergency physician saw her, she was breathless at rest.

On examination, she had bilateral ankle oedema, ascites and a pleural effusion. The liver was enlarged. Her blood pressure was low with a tachycardia of 120/min. JVP was elevated. Heart sounds were faint and the apex beat was not well defined. Chest X-ray showed an enlarged cardiac shadow and a pleural effusion. ECG was in sinus tachycardia with low-voltage complexes.

Q1 *What is the clinical diagnosis?*

Q2 *What ECG features could be found in this condition?*

Q3 *If this patient rapidly deteriorates and develops cardiac arrest, what ECG rhythm do you expect to find?*

ANSWERS

1. Cardiac tamponade.

Symptoms are produced when the pericardial fluid prevents the atria and ventricles from filling adequately during diastole and pumping properly during systole. Normally, the pericardial cavity contains about 80 to 200 mL of fluid. Onset of symptoms depends on the rate of accumulation of pericardial fluid. Beck's

triad of cardiac tamponade refers to hypotension, increased venous pressure and muffled heart sounds.

2. Possible ECG features:
(a) Low voltage QRS complex.
(b) T wave flattening.
(c) Electrical alternans (the height of the QRS complex alternates with each beat).
These features, however, are not specific for pericardial effusion.

3. Pulseless electrical activity.

Treatment should then be immediate CPR with rapid infusion of IV fluid, followed by pericardiocentesis through the subxiphoid approach. In the less urgent setting, pericardiocentesis should preferably be done with echocardiographic guidance. This is because the procedure is not without danger, e.g. injury to the lung, liver, myocardium and coronary vessels. The mortality and complication rate could be as high as 6% and 50% respectively.

This patient was later found to have carcinoma of the breast with involvement of the pericardium.

Point to ponder: How much pericardial fluid is required before it can be demonstrated on chest X-ray?

REFERENCE

Tsang TSM, Freeman WK, Sinak LJ, et al. Echocardiographically guided pericardiocentesis:evolution and state-of-the-art technique. *Mayo Clin Proceedings* 1998; 73(7): 647–52.

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Gas inhalation

Inhalation of toxic gases has aroused a lot of concern recently after the death a university research assistant. People may come to A&E to seek medical treatment whenever they have or they think they have inhaled a potentially toxic gas. Some days ago, a young mother brought her baby and the home-helper to the department complaining that they had been exposed to ammonia. The vapour had been produced when a bottle containing a household cleaning agent had toppled over. The exposure was short and the irritation had caused them a mild cough.

Q1 *How would you assess these patients?*

All three patients were admitted to the observation room.

Q2 *For how long would you keep these patients there if their initial assessment was completely normal?*

ANSWERS

1. Immediate attention should be paid to the presence or absence of life-threatening complications. In the case of ammonia inhalation, upper airway obstruction due to oedema and lung injury such as non-cardiogenic pulmonary oedema should be looked for.

If the patient is clinically stable, an assessment should be made of the duration of exposure, whether the exposure occurred in an enclosed environment, and of any symptoms and signs like cough, hoarseness, stridor and wheezing. Any possible cutaneous and mucosal exposure should be checked.

2. Ammonia is highly water-soluble and symptoms are rapid in onset. The purpose of observation is mainly to look for the development of upper airway obstruction and pulmonary oedema. Asymptomatic patients may be sent home after 1 to 2 hours of observation.

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Pseudocoma

If you work long enough in the A&E department, you are bound to see one or more cases with a really bizarre, baffling presentation. Sometimes the patient is labelled as a malingerer or hysterical, especially when there is no abnormal physical sign and the history given by the patient does not fit any clinical disease entity.

Q1 *Have you thought of the meaning of these words when you use them?*

There was a young man who presented with coma some time ago. He was subsequently found to be suffering from a psychiatric illness. The exact psychopathology of this patient was not known.

Q2 *If you were the doctor who saw this young man and you thought that he had feigned unconsciousness, what signs would you look for?*

ANSWERS

1. Factitious illness (Munchausen's syndrome), malingering, hysteria and somatization disorder are terms with different meanings. They must be differentiated from one another. The table below is a summary of their meanings.

		Perception of gain: Yes	Perception of gain: No
Conscious awareness	Yes	Malingering	Factitious disorder
	No	Conversion disorder	Somatoform disorder (hypochondriasis)

2. To judge if the patient is in a state of pseudocoma is difficult. Two eye signs have been reported in the literature which are characteristic in pseudocoma:

(a) Exaggerated Bell's phenomenon — attempted passive eyelid opening leads to upward rolling of eyeballs and gaze avoidance.
(b) Persistent downward eye deviation irrespective of head posture.

Other signs such as intact pupillary reflexes, corneal reflex and tendon reflexes, as well as the instillation of cold water into the external auditory meatus to elicit nystagmus are also useful.

The important point to note is that these conditions are diagnoses of exclusion. Knowledge of them, however, helps us avoid unnecessary intervention which may be harmful to the patient.

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Litigation in emergency medicine

If you work long enough in hospital, dealing with patients' complaints is almost unavoidable. Risk management refers to the identification and rectification of situations that may put the doctor at risk. In the US, emergency medicine is among the specialties which top the litigation stakes. Thus, risk identification in A&E is particularly important. Knowledge and care are essential. But how you write your medical record is also very important.

There is a useful book which outlines seven common deficiencies in medical records.

Q1 *Do you know them?*

If you know them all, you probably can skip this quiz.

ANSWERS

1. The seven deficiencies are:

(a) Illegibility.

(b) Not addressing the main complaint or other people's notes, including those of the paramedics. The paramedic's assessment notes accompanying the patient must be read. An explanation of any discrepancy of findings should be sought.

(c) Not taking note of abnormal vital signs and then discharging the patient.

(d) Incomplete records, e.g. omission of important negative signs.

(e) The diagnosis you make cannot be supported by your assessment and action.

(f) Not documenting the course of the patient in A&E, e.g. the response after an injection of Buscopan.

(g) Inadequate discharge instructions, always TCA (to come again) if….

REFERENCE

Markovchick VJ, Pons PT, Wolfe RE. *Emergency Medicine Secrets*. Hanley & Belfus, 1993.

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Foreign-body ingestion

One evening, a mother brought in her eight-year-old child. She explained that the boy had swallowed a fish bone. He told his mother that the bone was stuck in his throat. There was no haemoptysis or haematemesis.

The A&E medical officer examined the child's throat, but could find no bone. The only positive finding was an abrasion on the soft palate. X-ray of the neck did not reveal any radio-opaque foreign body or soft tissue swelling. The child was later admitted to the surgical ward. He was discharged the next day after a negative upper endoscopy. However, he presented again the day after his discharge drooling saliva and refusing to eat.

Q1 *What is the most important complication to look out for at this stage?*

On examination, the boy was found to be febrile with inspiratory stridor. X-ray of the neck and chest showed surgical emphysema and pneumomediastinum.

Q2 *How do you account for these findings in anatomical terms?*

ANSWERS

1. Acute upper airway obstruction.

2. The pre-vertebral fascia is composed of two layers. The anterior layer fuses with the connective tissue on the posterior surface of the oesophagus. This limits the retrovisceral space to the neck. The space between the two layers of the fascia, however, extends from the base of skull to the diaphragm. It thus provides room for the spread of infection. Upper airway

obstruction can be caused by surgical emphysema or abscess formation.

Penetrating injury is not uncommon in children, especially in toddlers who like to put objects in their mouths. Life-threatening complications are rare. Patients with symptoms should obviously be admitted. The discharge of the symptom-free patient remains controversial. Complications are known to occur even more than 48 hours after the injury. If these patients are discharged, their parents should be instructed to observe their children for 72 hours.

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