

Case 1 Postoperative dyspnoea

A man aged 75 years, a heavy smoker, with a degree of chronic bronchitis, was admitted as an emergency. He had noticed a right-sided groin hernia some years before, which had gradually enlarged and descended into the scrotum when he coughed. Eight hours before admission, during the night, he had had a bad coughing spell. During this, the hernia became larger than usual, was painful for the first time and he could not reduce it. He vomited green fluid.

On admission he was found to have a strangulated, indirect, right inguino-scrotal hernia. He had a productive cough with mucopurulent sputum. He was operated upon 2 h later. The hernial sac contained a loop of strangulated but perfectly viable small intestine. This was reduced and the hernia repaired.

Figure 1.1 demonstrates the patient's temperature chart. After a rather stormy convalescence, he made a good recovery.

What is the most likely cause of his postoperative pyrexia, tachycardia and dyspnoea?

Postoperative pulmonary collapse. This is extremely common following thoracic, abdominal or groin surgery, especially in a patient with pre-existing pulmonary disease. Pyrexia so soon after surgery is unlikely to be due to wound infection or pulmonary embolism.

What causes this complication?

Retention of plugs of mucus in the bronchial tree.

What factors were likely to be responsible in this patient?

In any complication following surgery, consider pre-operative, operative and postoperative factors.

- *Preoperative:* Heavy smokers often have chronic bronchitis, with excess of mucus in the bronchial tree.
- *Operative:* The anaesthetic drugs may irritate the respiratory mucosa and produce an excess of mucus secretion from the lining goblet cells; so does irritation by the endotracheal tube.
- *Postoperative:* The pain of the groin incision inhibits the expectoration of the accumulated bronchial secretions.

What physical signs would you have expected to find when you examined this patient on the first postoperative day?

As shown on the chart (Fig. 1.1), the patient would be tachypnoeic, pyrexial and have a tachycardia. There may have been cyanosis. He would have a 'fruity' cough, which he would try to suppress because of the pain that coughing would cause in the wound. Chest expansion would be greatly reduced and percussion might reveal dullness also at the bases of the lungs. Auscultation might reveal diminished air entry and the presence of crackling adventitial sounds, especially at the lung bases, heard posteriorly.

What was the treatment?

Vigorous breathing exercises, with encouragement to cough in the upright position. The pain in the wound on coughing, which would inhibit this, was managed by repeated doses of morphine given by a patient-controlled delivery system (patient controlled analgesia, PCA). In his case, as the sputum was already mucopurulent, ampicillin was also prescribed.

As can be seen on the chart, there was a good response to this management regimen.

Ward: C 12	Addenbrooke's Hospital Adult Observation Chart		BOLSOVER JASPER
Weight: 72 kg	Height: 1.62 m	Consultant: A. SURGEON	DOB 13-1-1932
Freq. of obs (date and initial changes)			

Date (DD/MM/YY)	5/11/07				6/11/07				7/11/07				8/11/07			Date						
Time (24hr)	10	14	18	22	2	6	10	14	18	22	2	6	10	14	18	22	6	12	18	Time		
	OPERATION																			Standing BP		
	Respiratory Rate	18	18	20	20	22	26	28	30	30	28	28	26	24	26	22	20	20	18		18	RR
	O ₂ Saturation %	97	97	96	95	96	92	89	88	90	90	92	92	94	96	96	98	98	97		97	Sats
	O ₂ % / lpm	A	A	40	40	40	60	60	60	60	60	60	60	60	60	60	40	40	A		A	Air = A
MEWS SCORES	Heart Rate	1	1	1	1	2	2	2	2	1	1	1	1	1	1	0	0	0	0	from local guidelines MEWS SCORES		
	Resp Rate	1	1	1	1	2	2	2	3	3	2	2	2	2	2	2	1	1	1			
	Systolic BP	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0			
	AVPU/GCS	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0			
	Urine Output	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0			
	Temperature	0	0	0	0	2	3	2	0	0	0	0	0	0	0	0	0	0	0			
Total	3	3	3	3	6	9	9	8	7	4	4	4	4	4	3	1	1	1	Dr/OR informed			
Dr/OR informed	✓																					
Pain Score	Use x to record	Severe																				Score AVPU - Use + to record
		Moderate	x	x		x		x		x		x		x		x		x		x		
		Mild																				
Initial	FW FW FW BC BC BC FW FW FW BC BC BC FW FW FW BC BC FW FW																			Initial		

PART 2: CASES

Figure 1.1 Sample temperature chart.