

Report on the Imaging of Adam Strain Date of Birth 4th August 1991

I have been asked by the Public Inquiry being conducted by John O'Hara QC to provide a report on the imaging of Adam Strain date of birth 4th August 1991.

In preparing this report I have been provided with the following imaging:

Chest x-ray dated 27th November 1995 labelled RBHSC Belfast

I have also been provided with the following documentation:

Brief for expert on radiology (undated)

Specific Instructions

1. Please report on the chest x-ray (attached) taken at 1.20pm on 27th November 1995 (2 hours after the end of the operation).
2. In particular please report on:
 - a) The state of the lungs
 - b) The position of the CVP catheter
 - c) Whether there is any evidence of subcutaneous oedema.

Imaging Findings

Chest x-ray - 27th November 1995

Hard copy film
Portable ICU film
AP view taken in expiration.

There is an endotracheal tube (ventilation tube) in situ with the tip in a satisfactory position above the level of the carina (the point of division of the main airway)

There is a right sided central venous catheter (CVP) in situ. This is projected over the right subclavian vein and ascends in a cranial direction in the right side of the neck. The tip of this catheter is beyond the superior margin of the film.

The heart size and mediastinal contour are normal.
Allowing for expiration the lungs are clear.

The visualised soft tissues and bones appear normal.

Specific Instructions.

a) The state of the lungs

A standard departmental chest x-ray is taken during full inspiration, with the x-ray plate in front of the patient and with the x-ray beam directed from behind the patient (Posteroanterior (PA) radiograph). This is optimum for visualisation of the lung fields.

In patients that are very young, unwell or immobile a chest x-ray can be taken portably on the ward. In this instance the x-ray plate is placed behind the patient and the x-ray beam is directed from the front. Ideally this radiograph should also be taken in full inspiration, but active inspiration is often limited in these patients resulting in a film taken in expiration.

In this case the film has been taken in expiration and as a result the lungs are not fully expanded. The visualised lung fields are clear.

b) The position of the CVP catheter

A central venous catheter is a catheter inserted into a large vein and passed into one of the central veins of the chest (the brachiocephalic vein/superior vena cava) or the right side of the heart in order to allow venous access for fluids or medication.

Although the tip of the catheter is not seen on the x-ray, the catheter is directed into the right sided neck veins and the position of the catheter is unsatisfactory.

c) Whether there is any evidence of subcutaneous oedema.

The presence or absence of subcutaneous oedema can be determined from a plain x-ray by the appearance of the subcutaneous fat and/or the clarity of the fat - soft tissue interface, but is not absolute.

In this case the subcutaneous fat shows uniform density without stranding (linear white markings within the fat on x-ray) and the fat - soft tissue interface is preserved.

These appearances are consistent with the absence of subcutaneous oedema, but it should be noted that it is possible for some subcutaneous oedema to be present in the absence of radiographic appearances.

It is not possible to quantify how much subcutaneous oedema is required to result in x-ray changes, but in my opinion the lack of changes on the chest x-ray make the presence of significant soft tissue oedema unlikely.



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27.10.11