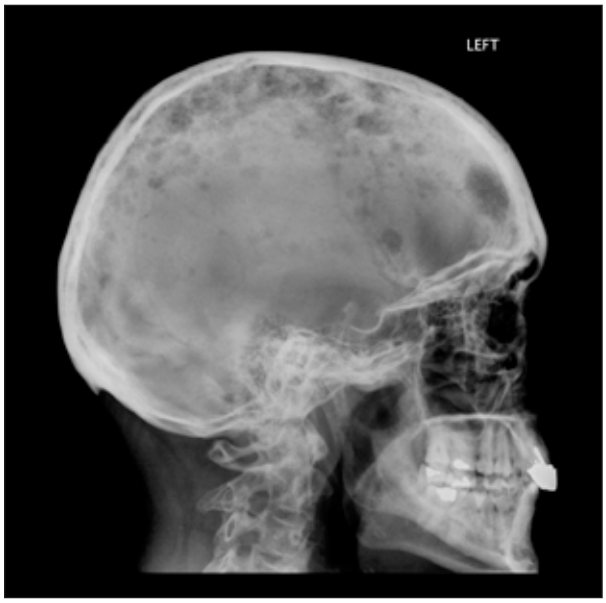
Curiositas

PATIENT SAFETY

The following patient is undergoing thoracentesis. What is the most obvious patient-safety error? Why, sometimes, does this sort of error occur in clinical practice?

Dr Gerry Gormley (Senior Academic General Practitioner, Queen's University Belfast) and Glenn Ritchie (Medical Student, Queen's University Belfast)

MEDICAL STUDENT QUIZ



1. What is the name of this classical radiological sign?
2. What disease processes can cause these appearances?

Michael Corr (Medical Student, Queen's University Belfast) and Dr Ian Bickle (Consultant Radiologist, Raja Isteri Penigran Anak Saleha Hospital, Bandar seri Begawan, Brunei Darussalam)

ANSWERS See overleaf

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POSTGRADUATE QUIZ

This is the cervical spine radiograph of a 58 year old man referred to the metabolic bone clinic.

1. What are the possible causes for the striking abnormality shown?
2. The diagnosis is supported when his dual-energy x-ray absorptiometry (DXA) results reveal extremely high T scores in both the hip and spine. What is the likely natural history of his condition?
3. What is the literal translation of the name of his condition?

Dr Paul Hamilton (Specialty Registrar, Chemical Pathology, Belfast Health and Social Care Trust) and Dr Tim Beringer (Consultant Geriatrician, Belfast Health and Social Care Trust)

HISTORICAL QUIZ

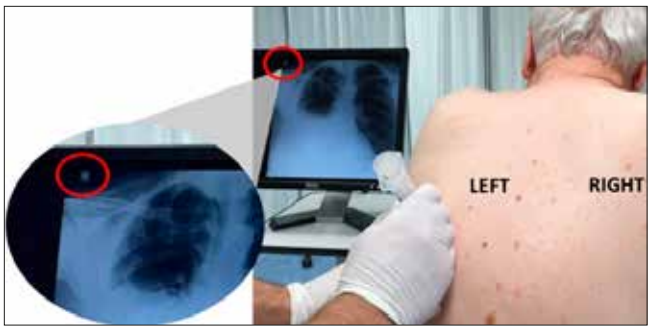
1. What is the name of this small silver Victorian medical device?
2. What purpose would this early Victorian medical device have been used for?

Dr Mark Frazer, Retired General Practitioner, Tonbridge, Kent.

Curiositas: Answers

PATIENT SAFETY

The patient is having a thoracentesis on the **wrong side** of their chest.



Some of the most catastrophic errors in medicine have occurred when an operation was performed on the wrong side, for example removal of the wrong kidney. However, such wrong-sided errors are not restricted to the operating theatre. Miller *et al* performed a Root Cause Analysis of wrong-sided thoracenteses *(performed in ambulatory clinics and hospital units other than the operating room)* that were captured in a National Patient Safety database.[1] As ever, such laterality errors are often multifactorial in origin, but often human error can be a major contributory factor. The authors provided guidance as to how we might best minimise such laterality errors occurring in clinical practice. Using and adhering, to 'check lists' should not be restricted to the operating theatre. Training, education and 'patient assessment for early detection of complications' are also recommended. Time-outs provide opportunities to detect errors early and, if possible, allow action to take place to minimise the impact of such errors on patients. Furthermore real time ultrasound guided thoracentesis also reduced error rates.[2]

On a daily basis we make numerous right-left decisions, often without a second thought. However, for a significant proportion of the population, correctly discriminating right from left is a challenging and demanding task. In healthcare we also have an extra challenge. When a doctor or nurse faces a patient, their right-side is on the patient's left-side. So correctly distinguishing right from left in a patient also involves the visuo-spatial function of mental rotation. So the next time you have to check the correct side of a patient, make sure to double check you actually have the correct side.

1) *Miller KE et al. Wrong-Side Thoracentesis Lessons Learned From Root Cause Analysis. JAMA Surg. 2014;149(8):774-779.*

2) *Jones PW et al. Ultrasound-Guided Thoracentesis: Is It a Safer Method? Chest 2003;123(2):418-423.*

Dr Gerry Gormley, (Senior Academic General Practitioner, Queen's University Belfast) and Glenn Ritchie (Medical Student, Queen's University Belfast). Thank you to the simulated patient portrayed in this picture who kindly gave consent for this image to be published)

MEDICAL STUDENT QUIZ

This is a 'Pepperpot Skull' which is most commonly identified in multiple myeloma. The key differentials are skull vault metastases and hyperparathyroidism. The image shows a granular or mottled calvarium with numerous punched out radiolucent lesions throughout the skull. The lucent rounded lesions represent the numerous holes in the top of a pepper pot (shaker). In myeloma the osteolytic lesions are due to malignant plasma cell proliferation invading the bone marrow and even the bone itself with rapid immunoglobulin production.

Michael Corr (Medical Student, Queen's University Belfast) and Dr Ian Bickle (Consultant Radiologist, Raja Isteri Penigran Anak Saleha Hospital, Bandar seri Begawan, Brunei Darussalam)

POSTGRADUATE QUESTION

The cervical radiograph shows osteosclerosis of the cervical spine vertebral bodies. These have a very characteristic 'bone within bone' appearance. The radiological differential diagnosis includes; hypoparathyroidism, Paget's disease of bone, hypervitaminosis D, sickle cell disease, thalassaemia, acromegaly, exposure to various chemicals and osteopetrosis.

Most causes of 'bone within bone' might be expected to reduce bone mineral density. In osteopetrosis however, bone mineral density is usually increased. In this case, the patient had markedly elevated T-scores (for example, +14.2 in the L2 vertebral body), making osteopetrosis the most likely diagnosis. Although bone mineral density is elevated, patients are at a higher risk of fracture compared to those with normal bone density.

Osteopetrosis literally means 'stone bone'. A sub-type is sometimes referred to as 'marble bone disease.'

Dr Paul Hamilton (Specialty Registrar, Chemical Pathology, Belfast Health and Social Care Trust) and Dr Tim Beringer (Consultant Geriatrician, Belfast Health and Social Care Trust)

HISTORICAL QUIZ

This is a 'Personal Respiratory Device'. In the words of the Patent granted to Thomas Wroughton on 26th August 1846 it is "an apparatus or instrument to be used for respiration. It consists of a flat rectangular case, containing sponge, and perforated on its inner and outer faces with numerous small holes. It is curved to fit the space between the lips and gums so that it may be held there by the mere compression of the lips and be externally invisible - or nearly so - when in use".

It seems probable that the sponge (or wadding) would have been soaked in Menthol and the '*Therapeutic Vapours*(!)' inhaled by the patient.

Perhaps Wroughton's Patent Respirator can be regarded as the forerunner of the advanced inhalers of today!

Dr Mark Frazer, Retired General Practitioner, Tonbridge, Kent. Curiositas would like to thank Dr Frazer who kind gave provided permission to publish these images.