

NASOGASTRIC TUBES (NGTS): ARE WE GETTING IT RIGHT?

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INTRODUCTION

A misplaced nasogastric tube (NGT) that is not identified prior to use is categorised as a 'never event' (1). Although easily preventable, incorrectly placed NGTs can be fatal (2). As radiographers, are we doing enough to prevent this?

METHOD

A retrospective audit was completed over six months reviewing NGT chest x-ray (CXR) requests. Each request was evaluated to see if it stated whether an aspirate had been obtained. The corresponding images were also appraised to look at the position of the NGT tip and the orientation of the detector as these factors are largely dependent upon technique i.e. centering points and exposure factors.

FINDINGS

- 43% of requests stated that an aspirate could not be obtained or that the pH of the aspirate was too high (above 5.5).
- 96% of reports concluded that the tip of the NGT was in the stomach or past the diaphragm and 4% were seen in the lung.
- 60% of chest x-rays were performed using the detector in a portrait orientation whereas 40% were performed using the detector landscape.

DISCUSSION

Although 57% of requests did not state whether an aspirate had been attempted, these requests were received from the critical care unit where many patients receive acid-inhibiting medication. This can reduce the sensitivity of pH measurement for gastric placement, rendering it an unreliable test (2). It is important to remember that a pH test is four times less expensive than performing a CXR, highlighting the importance of ensuring that an aspiration has been first attempted whenever possible (3). In 4% of those cases where the NGT tip was reported in the lung, no documentation had been made, suggesting that some radiographers may require basic training in NGT interpretation.

An audit of 166 junior doctors revealed that only 31% had any formal guidance on the use of x-ray for checking NGT position (4). This suggests that basic training for radiographers may be valuable to help support junior staff. Figure 1 and 2 demonstrate a correctly sited NGT (5) and incorrectly sited NGT (6).

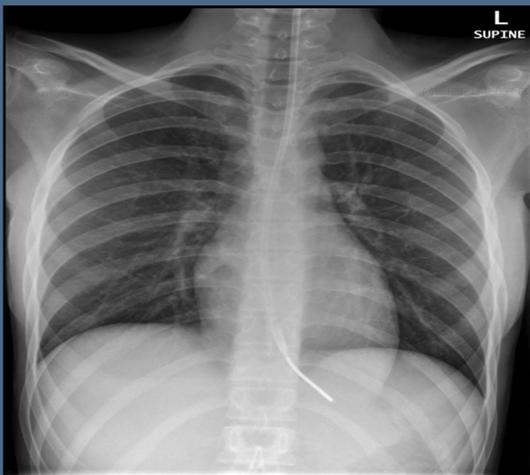


Figure 1. Correctly positioned NGT (5)

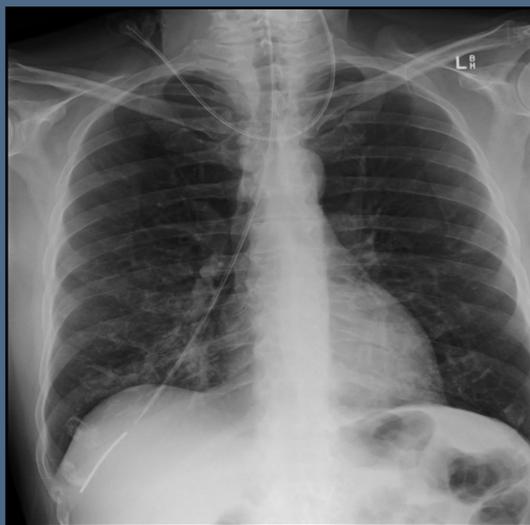


Figure 2. Incorrectly positioned NGT (6)

FIGURE 3. STHK NGT POLICY

5.9 Radiographers' Responsibilities

- The radiographer must ensure that exposure of the x-ray is adjusted to allow the NGT to be visible to the bottom of the film.
- The radiographer must ensure the film is centred lower than would normally be appropriate for a CXR so that it shows the abdomen as far as possible below the diaphragm.
- The film must show the bottom of both hemi-diaphragms in the midline.

CONCLUSION

All NGT check CXRs should be performed with the detector in a portrait orientation. Adequate positioning is fundamental to ensure visualisation of the distal end of the NGT (2). Many NGT position CXR requests do not state whether an aspirate has been obtained. If there has been an attempt to aspirate gastric contents, then this should always be stated on the request. A CXR should only be performed as a second line test when no aspirate has been obtained or pH indicator paper has failed to confirm the location of an NGT (8). If this is not clearly specified, the ward should be contacted and if necessary, the examination should be cancelled or re-requested. This could avoid unnecessary exposure to radiation (7). Along with selecting the appropriate exposure factors, radiographers are reminded that windows can be manipulated to improve contrast and visualisation (2).

RECOMMENDATIONS FOR FUTURE PRACTICE AT STHK

ANNOTATION WITH EXTERNAL TUBE MEASUREMENT

When a patient attends for a CXR to confirm the position of an NGT, the radiographer should annotate the image with the following information:

- The external tube length measurement at the nose e.g. 20cm.
- The time of the exposure e.g. 17:00.

If a patient then re-attends for further imaging, this information can be used as a reference to ensure the NGT has been advanced or withdrawn.

This method would help avoid any unnecessary radiation and would be beneficial to the referrer to verify a patient's most current CXR (7).

URGENT REPORTING

To guarantee that all NGT CXRs are reported the same day, radiographers should ensure that all requests are coded on a Radiology Information System (RIS) as '5' (urgent). Furthermore, the reporting urgency should always be 'U'. Alternatively, NGT CXR checks should be reported while the patient is in the department. This would prevent any delay in the initiation of treatment or management.

INTENDED CLINICIAN

Using a RIS, radiographers should enter a specific code into the intended clinician box e.g. RBNGT. This would highlight to the radiologists that these requests need to be treated with priority.

E – LEARNING

'Plain X-rays of the Adult Chest: Emergency, Lines and Instrumentation' is one online module which could help radiographers in the recognition of correctly and incorrectly sited NGTs (9).

THE FUTURE

When a CXR is used to confirm the position of an NGT, it is important that an appropriately trained professional interprets the results as there have been a number of deaths reported following misinterpretation (2) (10).

CHEST REPORTING BY RADIOGRAPHERS

With the increasing evidence that radiographers can perform just as well as radiologists (11), clinical reporting is one method to deliver an effective, efficient and patient focused radiology service (12). With regards to NGTs, The NSPA (2011) believe that consideration needs to be given to the timing of insertion as out of hours placement may be more problematic if reliant on interpretation by junior medical staff. A 'hot reporting' service could prevent this, providing an immediate report by a specifically trained professional with an accredited post graduate qualification. Milner and Snaith (2015) believe there are approximately 100-150 CXR reporting radiographers (13). Why would we benefit from increasing this number?

BENEFITS OF REPORTING RADIOGRAPHERS

- Help meet the demand and decrease turnaround times. In February 2016 there were 175,000 plain films unreported after 31 days (14).
- A CXR is the first diagnostic test in the lung cancer pathway. A quick diagnosis is essential yet there is increasing demand for radiologists to be used for cross sectional reporting and in intervention (15).
- Provide an alternative to outsourcing. Are extra contractual sessions sustainable?
- Cost effective (16).
- Radiographers can contribute to education (17).
- The opportunity for progression improves recruitment and staff retention (18).

RADIOGRAPHERS RESPONSIBILITIES

It is the radiographer's responsibility to produce a CXR that adequately demonstrates the position of an NGT (2). The STHK NGT policy (Figure 3) reiterates this (7).

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