



ORIGINAL RESEARCH PAPER

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HIDE & SEEK WITH THE RYLE'S - AN EXHUMING EXPERIENCE

KEY WORDS: Ryle's Tube, Impacted, Kinked, Rosenmuller's Fossa.

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ABSTRACT

65-year-old gentleman came to ER with a partly removed Ryles tube impacted in right nasal cavity. On Examination three fourth of Ryles tube exteriorised and remaining insitu in right nasal cavity. Investigations revealed the tip in Rosenmuller's fossa in proximity with ICA.

INTRODUCTION

Nasogastric tube was named after Sir George Alfred Ryles. The term Ryles tube is commonly used in commonwealth countries. Length varies from 105-125 centimetre and has different colour coding for various sizes from 6Fr to 20Fr. There have been few incidents of misplaced Ryles tube reported in literature and we shall be discussing one such impacted tube we came across in our institute.

Case History

A 65-year-old hypertensive gentleman with CAD who has undergone chemoradiotherapy for squamous cell carcinoma hypopharynx has got a Ryles tube inserted 3months ago after his last cycle of radiotherapy and patient has been fed through the same. There has been no history of aspiration or difficulty in feeding. In view of changing the Ryles tube a removal attempt has been made but could not be completed as patient had pain following which he was advised surgical removal under GA. It was then he presented to our Institute ER with a partly removed Ryles tube (removal attempted in a tertiary care centre elsewhere) impacted in right nasal cavity.

On examination patient was conscious, oriented with stable vitals and no signs of respiratory distress. Anterior Rhinoscopy: Three fourth of Ryles tube exteriorised and one fourth in right nasal cavity abutting the septum with no further visualisation of the tube in b/l nasal cavities. Diagnostic Nasal Endoscopy showed Ryles tube in right nasal cavity piercing the septum to enter the left nasal cavity where it was kinked and re-piercing the septum to enter the right nasal cavity where it was found impinging on the fossa of Rosenmuller with the tip of tube not being visualised. A computerised tomography scan confirmed the DNE findings with the tip of the tube within the fossa of Rosenmuller around 1cm away from internal carotid artery (ICA).

Procedure

In operation theatre (with anaesthetist team backup) bilateral nasal cavities packed with 4% lignocaine-soaked patties and removed. Patient in supine position parts draped. Impacted Ryles tube visualised with a zero-degree endoscope and DNE findings were confirmed. Ryles tube divided and removed in two parts by first cutting the kinked portion in left nasal cavity. The part in right nasal cavity removed gently by grasping the

tube close to the septal piercing site. Impinged portion meticulously liberated from fossa of Rosenmuller without injuring the ICA until the tip was visualised. Now the remaining portion of the tube was gently removed from left nasal cavity. Adequate haemostasis achieved with lignocaine (4%) and adrenaline (1:100000) soaked packs. Post operative DNE showed bilaterally free nasal cavities with no evidence of residual bleeding, clots or cut end of the tube within the cavity.

DISCUSSION

Over the past two decades Ryles tube or nasogastric tube has gained widespread acceptance as an alternative for oral feeding in patients with low GCS or with any pathology that affects the normal swallowing mechanism and for stomach decompression. Ryles tube insertion is a simple bedside procedure done not only by otorhinolaryngologists but also by physicians of various disciplines. To accomplish the insertion of nasogastric tube without causing trauma to the nasal mucosa and proper positioning of the tube in stomach it requires proper anatomical orientation of nasal cavity and pharynx. Blind insertion of the tube might result in complications such as ulceration and bleeding from the nose, pharynx, larynx, oesophagus, and stomach. Inadvertent placement of the tube into the bronchopulmonary system has been reported in 2% of cases which ultimately results in aspiration [1-3] 0.2% -0.7% of patients have reported with pneumothorax/ haemothorax post Ryles tube placement [2-5]. Mortality associated with NG tube insertion is approximately 0.3% [1,6,7]. Chest radiograph is recommended before feeding initiation to confirm the position of the tube in stomach. Dasani and Sahdev reported knotting of nasogastric tube in 1991, commonly noticed when smaller diameter tubes inserted deep into the stomach [8].

Agarwal et al suggested pushing or pulling of the nasogastric tube after it has been successfully placed into the stomach either by physician or spontaneously via neck movement or coughing may lead to formation of a loop in the pharynx. If the Ryles tube rotates in the pharynx it may form a knot around that structure where rotation is observed. Literatures reveal similar kind of knotting around epiglottis resulting in respiratory distress [1]. Once knotted, the traction during removal tightens the knot. Insertion of tube longer than

required length and repeated advancement of tube serves as risk factors for knotting [9]. Intra-gastric part of tube might become rigid on exposure to HCl or alkaline content entering patients' stomach from duodenum [10].

In our case nasogastric tube might have pierced the fibrosed (postradiotherapy) mucosa of nasal septum and coiling must have happened in the distal end (stomach) at the time of insertion either because of repeated attempts (patient history) or because of patient trying to manipulate the tube in the due course of it being insitu. Within the three months period of tube being insitu the intra-gastric portion had become rigid. When an attempt to remove (by a physician in an institute elsewhere as per patient history) had been made, withdrawal would have been with ease until the septal piercing site was reached which is evident from the proximal three fourth of the tube being exteriorised. On reaching the pierced site (in nasal septum) when an additional pressure to pull the tube has been applied the distal rigid portion which had been coiled when insitu would have formed a loop around the nasal septum just like a loop formed around epiglottis [1,11]. The tip of the looped distal portion got lodged in the fossa of Rosenmuller, which has its proximity with the petrous portion of ICA.

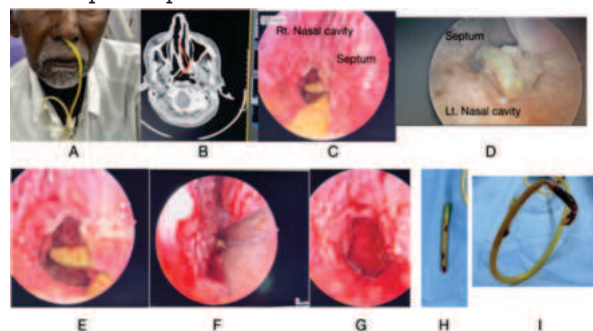


Figure 1: A - Impacted tube at the time of presentation ; B - CT showing the impacted foreign body traced parallel to the red line marked ; C - Ryle's tube piercing the right side of septum ; D - Tube kinked in left nasal cavity and re-piercing the septum ; E - Re-entering the right nasal cavity and impinging on Rosenmuller's fossa with tip not being visualised ; F - kinked portion being cut with turbinectomy scissors ; G - Right nasal cavity post tube removal ; H & I - Removed portions of the tube showing the impinged portion and the kinked part respectively

CONCLUSION

Seemingly a simple bedside procedure, not all nasogastric tube insertions and removal are easily achieved. Occurrence of unexpected complications can be avoided by doing under endoscopic guidance when any difficulty encountered on insertion / removal.

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