"Safety pin" – A question to its safety!

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ABSTRACT

Foreign body ingestion is not an uncommon problem in children. They can ingest various foreign objects and one of such objects is a safety pin. The ingestion of such foreign body is not widely reported in the literature. This case highlights the risk of accidental ingestion of safety pin used on child's clothing to protect him from cold that can result in lethal complications. In a poor developing country like Nepal, this case serves to address all mothers alerting them of their ignorance while using safety pin in infants. In addition, physicians are reminded to obtain a detailed inquiry of suspected foreign body ingestion in every child with the history of dysphagia.

Keywords: Safety pin, foreign body, oesophagus.

Small children frequently swallow foreign objects as they have natural proclivity to put things in their mouth. The peak incidence of such ingestion is between 6 months and 3 years.[1] One of such foreign object is a safety pin. Its ingestion is not widely reported in the literature.[2] Reports from developed countries reveal that the frequency of ingestion of safety pins and other types of pins has decreased concurrently with the increase in popularity of disposable diapers.[3] Despite this fact, poverty and illiteracy persist as bitter realities in most homes of our country. It would be universal to say that a mother's care and concern for her baby are not based on any grounds. The use of a safety pin in the clothing of a baby to protect from cold is a reflection of the same thought. Irony to this is her ignorance about the fact that safety pin can be swallowed, and present as foreign body in the upper digestive tract of the child and subsequently become life threatening.

CASE REPORT

We are reporting this case because of the age of the infant, to highlight the fact that a nine month child is capable of swallowing a foreign body by its own and also about the unawareness and ignorance on part of the parents regarding the pin's safety. A nine month old male child was brought to the emergency with excessive crying, not able to breast feed, excessive salivation and fever for 4 days. Detailed inquiry about foreign body ingestion was taken from the mother, but there was no affirmation until x-ray soft tissue neck was advised. There was a large open safety pin with sharp end pointing downwards was seen in cricopharyngeal region on A.P view (Fig.1). Lateral view depicted it to be in the upper part of esophagus (Fig.2).

The child was taken for removal of safety pin under general anaesthesia where pediatric rigid oesophagoscope was negotiated. The sharp end seemed to be impacted in the lateral wall. The top of the safety pin came in it but the sharp end was still embedded in the lateral wall. Gently the top of the safety pin was caught hold by forceps and removed. Ryles tube was put and feeding by mouth was stopped for 48 hour. Postoperative recovery was uneventful. Check X-ray was normal. Ryle's tube was removed on third day morning and the child was discharged under antibiotic cover and was clinically unremarkable post follow up.

DISCUSSION

Pediatric foreign body (FB) ingestion is a common problem. Many of these foreign bodies are sharp objects such as needles, toothpicks and safety pins.[4] Literature search on foreign body has brought to light an interesting association of safety pin; as a foreign body; with the children of Turkey. Forty nine pediatric cases witnessed safety pin ingestion during a sixteen year period. This occurrence was mostly due to their social practice of using safety pins to attach the blue beads to a child's dress with the belief of averting evil eye.[4] In our neighboring country India, accidental ingestion of safety pin has been reported amongst other sharp foreign objects.[5] However Pokhrel *et al*, in a four year retrospective study in Nepal, did not encounter any safety pin amongst the various foreign bodies ingested.[6]

Severity of symptoms in foreign body ingestion depends upon size, type, site and period for which the foreign body is lodged.[7] Foreign bodies in the esophagus must be removed because of their potentially hazardous outcomes such as esophageal obstruction, subsequent aspiration and even eventual erosion of the esophageal wall.[8] Sharp objects such as open safety pin, may pierce the hypopharynx and cause fatal common carotid artery rupture.[9] Immediate endoscopic retrieval is warranted in such cases.[10] Successful retrieval of open safety pin is a challenge in itself and can be done either by rigid

Fig. 1. X ray showing open safety pin in cricopharyngeal region with sharp end pointing downwards.

Fig. 2. X ray neck lateral view showing open safety pin.

esophagoscopy or flexible endoscopy**.** Various techniques have been adopted for removal of open safety pins depending on the direction of its sharp end. If the sharp end is pointed upwards and is visible then the option for removal includes: i) Closing the safety pin using closing device and bringing out the pin as closed pin with Jesberg pediatric esophagoscope (Karl Storz, Tuttlingen, Germany), ii) Engaging pointed edge into endoscope and then withdrawing it,[11] or iii) Taking the sharp end inside the esophagus and removing it.[5,12] In case of sharp end pointing downwards as in this case, the risk is of the sharp end having already perforated the lumen, and such a case pose danger of severe haemorrhage if the sharp end has perforated through heart[13] or the great vessels.[9,14] A very careful endoscopic assessment and detailed study using CT scan can reduce this risk. These cases must be explored and not treated endoscopically. In our case however, the sharp end could be visualized lying in the lumen of oesophagus.

Thus, a careful evaluation and retrieval is needed when such a foreign body is encountered in the esophagus because the slightest slip can perforate it, as well as the heart or the great vessels in the mediastinum.[14] In every child with the history of dysphagia, a detailed inquiry of suspected foreign body ingestion is needed from each member of the family where the child resided.[7] In this case, there was failure to elicit history of foreign body on the first visit to the primary health centre and the child was kept on treatment for pneumonia. At our institute it was a discovered on radiology and the mother was able to recall about the safety pin only when she was probed subsequently.

In a developing country like Nepal the parents of usually lower economic strata dress their children with improperly stitched clothes and inadvertently use safety pins on them to protect the child from exposure to cold. This may sometime lead to accidental ingestion of safety pin. This case, will serve as a reminder of the necessity of health education by instructing through radio/posters, the following:

i) Mothers not to use safety pin on the clothing of infants.

ii) Health professionals at the primary health centers to specifically inquire about the use of safety pin in the clothing of those infants presenting with dysphagia even when there is no history of foreign body ingestion given by relative/care giver.

iii) Radiological evaluation is a must in each case of dysphagia.

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