Fractured tracheostomy tube

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A significant number of patients require to wear tracheostomy tubes over a prolonged period. There are several reports of the problems these tubes can present, and comparison of various materials used in their manufacture (1, 2, 3, 4). The following case is presented because of its unusual nature, where a fractured tracheostomy tube presented as a foreign body.

Case history

A 60-year-old man was treated in 1965 with radiotherapy for a carcinoma of larynx. In 1966 he required a tracheostomy for laryngeal obstruction due to stenosis following radiotherapy. Thereafter he was unable to breathe satisfactorily without a tracheostomy. In March 1972 he was admitted as an emergency with partial respiratory obstruction. He indicated to us that the plastic tracheostomy tube had broken and part of it was retained in his respiratory passages.

He was taken to theatre and the tube was seen in the trachea about 2 cms. below the tracheostomy opening. It was partially rotated and presented considerable difficulty in its removal. The tube was found to have fractured at the junction of the flange and the endotracheal portion (Fig.). Both portions were hard and opaque.

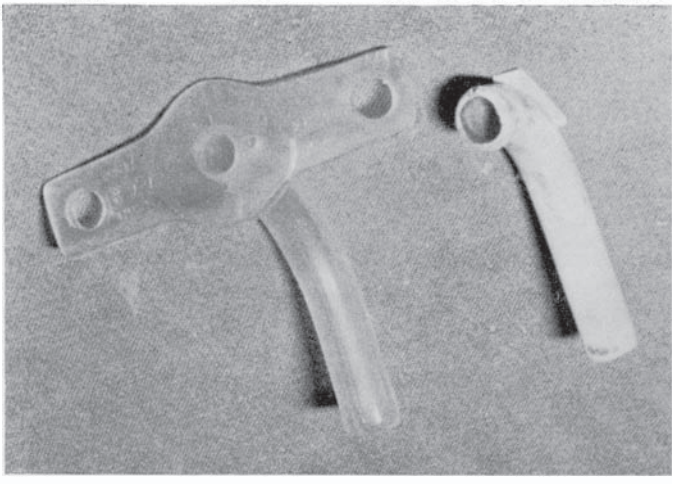


Fig. 1.

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Comment

The patient had been using two polyvinyl chloride (PVC) tubes on alternate days over a period of five years. The tubes were 'sterilized' by boiling when he changed them. It appears that prolonged use and repeated boiling may have weakened the tube which eventually resulted in a fracture. An added factor may have been a degree of degeneration of the tube which has been stated to occur within the body (5). The makers of the tube give the following instructions in their manual. 'All PVC articles manufactured can be sterilized by boiling. It may be noted that all PVC materials go cloudy or opaque when boiled. This is due to absorption of water into the material, but the physical properties are not affected in any way. When the material is thoroughly dried out, the original clarity will be restored.'

This case raises the question as to whether PVC tracheostomy tubes should be used over prolonged periods and whether it is necessary to sterilize them. Ideally these tubes are disposable after being used once, but this may not be justified on economic grounds. It would appear, however, that these tubes should have a prescribed life span. It could be presumed that boiling occasionally has no serious effect on these tubes, but for regular use all that is required is a clean tube which can be obtained by washing in warm water. Other forms of sterilization that are mentioned for PVC may result in production of some toxic substances (6).

A case of a broken tracheostomy tube has been reported in the past (7). In that instance a German silver tube was thought to have been weakened by chemical processes. The cause of breakage in this instance may have been due to repeated boiling and prolonged use.

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