where N is the total number of sibs, A is the number with glomerulonephritis, B is the number with the HL-A2 antigen, and X is the number with both glomerulonephritis and HL-A2 antigen. Families for which all sibs are alike either for the HL-A2 antigen or for the presence of glomerulonephritis were not scored. The scores are added and the $(\text{Total})^2/M$ (M = number of families scored) is approximately chi-square with one degree of freedom if there is no association.

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Medical Memoranda

Rare Complication of Tracheostomy : Erosion of Innominate Artery

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During the past 20 years there has been a remarkable change in the whole concept of tracheostomy, and the advent of positive-pressure ventilators has revolutionized the treatment of all forms of ventilatory insufficiency. However, tracheostomy should not be regarded as a "harmless" procedure (Watts, 1963). Erosion of the innominate artery is a rare complication. Three fatal cases due to erosion of the innominate artery have been reported by Lunding (1964) and one death on the 77th day by Stiles (1965). Davis and Southwick (1956) described two cases of erosion of an anomalous innominate artery.

A case of tracheostomy in which death was due to erosion of the innominate artery on the 15th postoperative day is described.

CASE REPORT

A man aged 20 was admitted to hospital as a medical emergency on 3 November 1968. He complained of a cough, difficulty in swallowing, and paraesthesia in both hands. Thirty-six hours previously he had experienced difficulty in focusing his right eye and had noticed numbness of the face on both sides. A diagnosis of "viral encephalitis" was made. On 8 November the E.N.T. unit was contacted on account of respiratory failure. Tracheostomy was performed under general anaesthesia with endotracheal intubation. A 13-mm. cuffed Portex tracheostomy tube was inserted and connected to a Bennett respirator for intermittent positive-pressure respiration. He was making a slow recovery, but on 23 November, 15 days postoperatively, there was massive haemorrhage through

the tracheostomy and 4 to 5 pints (2.3 to 2.8 litres) of blood was sucked out from the tracheobronchial tree. In spite of all efforts he collapsed and died.

Post-mortem Examination.—A plastic cuffed tracheostomy tube is present in the trachea. The cuff of the tube has eroded through the posterolateral wall of the trachea on the right side 3 cm. above the carina. The trachea at the site of the cuff shows marked inflammatory changes and is abnormally dilated. Both lungs show widespread bronchopneumonic changes with blood in the bronchial tubes. An erosion, size about 1 by 1 cm., is present in the innominate artery. Microscopical examination of the brain stem and spinal cord show considerable anterior horn cell damage. Appearance suggests poliomyelitis.

In this case the cause of tracheal perforation is not clear. Care was taken to deflate the cuff of the tube regularly every four hours and not to overinflate it.

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