

Traumatic haemorrhage into the thyroid simulating major vessel damage from deceleration injury

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Lawton, G. (1974). *Thorax*, 29, 607–608. **Traumatic haemorrhage into the thyroid simulating major vessel damage from deceleration injury.** Haemorrhage into the thyroid gland is a well recognized condition but there are few cases in the literature of severe haemorrhage associated with trauma. A case is described of a patient involved in a road traffic accident where the clinical features strongly suggested a diagnosis of great vessel rupture associated with deceleration injury. The importance of considering the possibility of haemorrhage into a retrosternal thyroid gland in a closed chest injury is stressed, as is the importance of arch aortography in management.

CASE REPORT

The patient, a 69-year-old male retired doctor, was involved in a road traffic accident and was admitted by ambulance to the casualty department of the Royal Northern Hospital. On admission he was conscious and did not appear unduly distressed, but within minutes of his arrival he collapsed with a cardiac arrest. This was rapidly reversed but there was sudden development of swelling of the neck, face, and upper limbs. The patient had not recovered consciousness at this stage and although an endotracheal tube had been passed, there appeared to be some respiratory difficulty. In view of the history of closed chest trauma, together with the very sudden development of collapse, cardiac arrest, swelling of the upper limbs, head and neck, and respiratory difficulty, a tentative diagnosis of great vessel rupture was made.

This was thought to be confirmed on the chest radiograph which showed widening of the superior mediastinum with ill-defined lateral margins. An emergency arch aortogram was performed and the films (Figure) showed that the ascending aorta and aortic arch were displaced downwards with gross splaying of all the major vessels. The innominate artery was stretched around a large soft tissue mass which was also displacing the trachea well to the right. The left common carotid and, to a lesser extent, the left subclavian were also deviated by this massive upper mediastinal, thoracic inlet and neck swelling. No leak or tear in the intima of the vessels was visualized. In view of the increasing swelling, it was decided to explore the neck and thorax. At operation (Mr. A. Small and Mr. M. Bates) a large cystic retrosternal goitre, dumb-bell in shape, extending into the neck was found and delivered from the thorax. It measured $14 \times 7.5 \times 5.5$ cm.

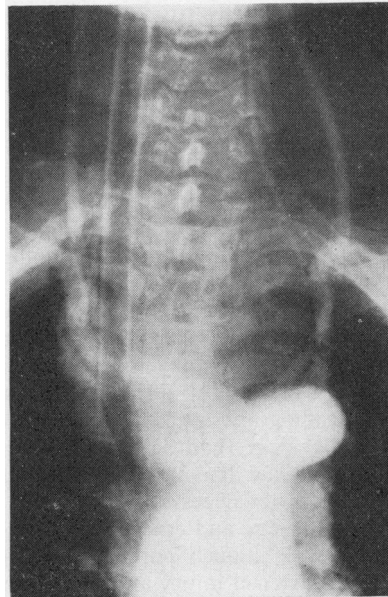


FIGURE. Arch aortogram (AP film) with contrast in the major vessels. The ascending aorta and aortic arch are displaced downwards and there is spreading out of all the major vessels. The trachea (with an endotracheal tube) is considerably deviated to the right by a large mass that is displacing the left carotid and subclavian arteries to the left.

The outer surfaces were covered by dark red adhesions and some haemorrhage. The capsule was ridged from fibrosis and the cavity was multilocular. Some of the intralocular sectors were rigid with

blood clot from a massive recent haemorrhage into the goitre. There was little extracapsular haemorrhage. The mediastinal cavity was drained postoperatively and the patient made an excellent recovery, being discharged home nine days after admission.

DISCUSSION

Traumatic haemorrhage into the thyroid appears to be rare whereas great vessel rupture due to deceleration injury from road traffic accidents is relatively common. Grace and Shilling (1969) reported a case of traumatic haemorrhage into the thyroid due to domestic trauma but there do not seem to be other recent reported cases in the English literature. Simon (1894) and Ballin and Morse (1925) described cases of traumatic haemorrhage. Ryan (1942) discussed haemorrhage into the thyroid following muscular effort. Wendel (1936) recorded a case of haemorrhage following straining at defaecation, and Clute (1931) described housework as the precipitating trauma in two women. There appear to be few other genuine reports of traumatic haemorrhage into the thyroid but the literature on great vessel damage from deceleration injuries is now considerable.

It is apparent that the clinical diagnosis of traumatic haemorrhage into the thyroid following injury will only be made if it is considered.

Radiologically, both traumatic haemorrhage into the thyroid and closed-chest injury may produce the same plain chest radiograph findings of a superior mediastinal widening which is uniformly opaque. The lateral margins are usually ill-defined with closed-chest trauma and better defined with intrathyroid haemorrhage but this differentiating feature is difficult to assess on emergency radiographs taken with a portable machine under less than ideal conditions. The superior mediastinal haematoma associated with vessel rupture is not necessarily associated with a major arterial injury and emergency aortography is required to distinguish purely venous haematoma from an arterial injury and also to show the

arterial tear if present. Arch aortography in this case did not reveal any evidence of arterial rupture and the very wide deviation of the trachea to the right, associated with splaying of the vessels, indicates a more solid lesion than a purely venous haematoma, since the latter is more likely to surround and compress rather than deviate the trachea. It is important to know the position of the major vessels in relation to the trachea and to the mediastinal haematoma whatever the prime lesion. This can be visualized only by aortography, and the value of aortography depends upon the urgency with which it is done.

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