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A common carotid artery aneurysm causing severe dysphagia

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Abstract
Extracranial carotid artery aneurysms are rare, but are occasionally recognized as causing dysphagia. These aneurysms generally occur at or above the bifurcation. Here we present what we believe is a unique case: a common carotid artery aneurysm compressing the upper oesophagus, and mimicking the obstruction of a post-cricoid carcinoma.

Key words: Deglutition disorders; Aneurysm; Carotid artery, common

Case report

An 87-year-old lady was admitted with progressive painless dysphagia which had developed over the preceding month. She was also known to have a right common carotid artery aneurysm. This had presented 10 years previously as a pulsatile swelling in the neck. Ultrasound examination at that time confirmed a true aneurysmal dilatation of the vessel, although there was also ectasia. Because of her age, and in the absence of any complications, surgery was deferred. The aneurysm was followed with serial ultrasonography, and was observed to be stable over several years. There had been no recent change in the size of the pulsatile neck swelling at the time of this admission.

Examination revealed a frail, elderly lady, unable to swallow her own saliva. There was a pulsatile, expansile, mass arising from the root of the neck on the right side. Indirect laryngoscopy revealed pooling of saliva in the piriform fossae. She was normotensive and there were no other physical findings of note.

Routine blood investigations were unremarkable. A radiograph of the chest showed evidence of old tuberculosis, but this was unchanged from previous films. A barium swallow (Figure 1) revealed an irregular narrowing of the post-cricoid region. This was considered radiologically most likely to be a post-cricoid carcinoma.

At oesophagoscopy, there was a pulsatile obstruction of the upper end of the oesophagus, arising from the right. This was attributed to the aneurysm. No intrinsic lesion was seen. A nasogastric tube was passed for feeding.

Unfortunately, post-operatively the patient's cardiorespiratory function deteriorated, and she died some 48 hours later. This was before her aneurysm could be further investigated.

Post mortem examination

The arch of the aorta was unusual in that the brachiocephalic trunk and the left carotid artery arose very close together, at an abnormally acute angle to each other; but such variants are well recognized. The right common carotid artery was both truly aneurysmal and ectatic, and was impinging directly on the oesophagus (Figure 2). There was no intrinsic oesophageal lesion present.

In addition there was evidence of marked myocardial hypertrophy and of pulmonary congestion. Death was attributed to heart failure secondary to hypertensive heart disease. There were no other findings of note.

Discussion

The occurrence of extracranial carotid artery aneurysms is rare. Dehn and Taylor (1984) reported only nine cases of extracranial carotid artery aneurysms collected over 14 years (in this period 469 procedures were undertaken for aneurysms at other sites). McCollum *et al.* (1979) described 16 true extracranial carotid aneurysms over a 21-year period (during which time approximately 8500 aneurysms arising elsewhere in the arterial tree were treated). A third series, Busuttil *et al.* (1980), described a further 14 true carotid aneurysms collected over 24 years.

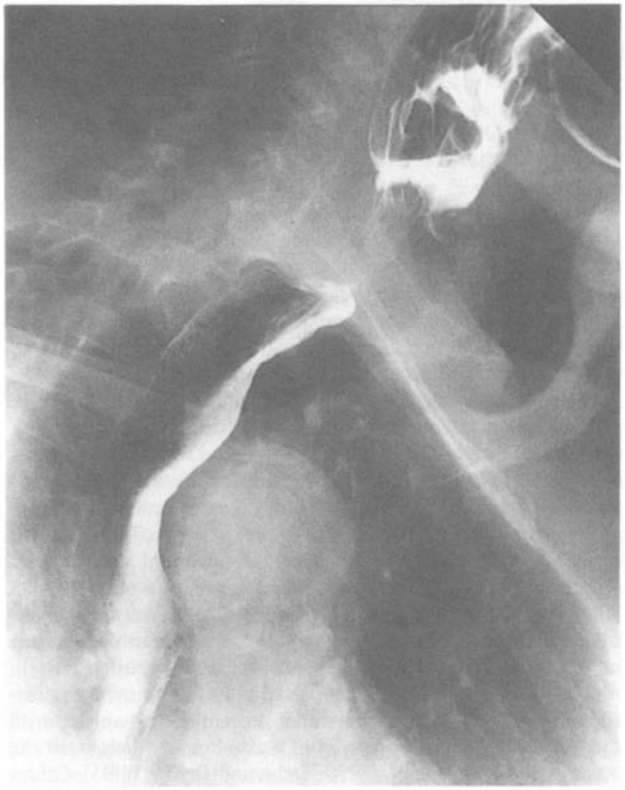

Fig. 1
Barium swallow demonstrating a constant stricture in the post-cricoid region.

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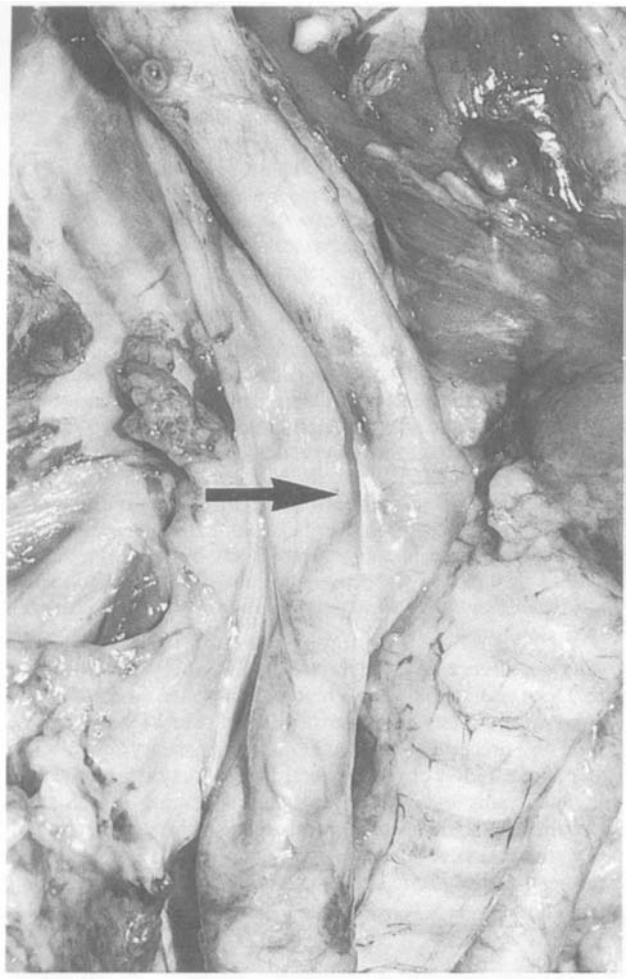

FIG. 2

Post-mortem dissection showing an aneurysmal and ectatic right common carotid artery (arrowed) impinging on the oesophagus.

Not only are extracranial carotid aneurysms rare, but they do not occur evenly throughout the carotid tree. Reviewing these three major series, 39 true aneurysms were described. Of these one was located in the distal common carotid, three further cases were described as being diffusely aneurysmal affecting both the common and the internal carotid, whilst the remaining 35 aneurysms arose at the bifurcation (13 cases) or above from the internal carotid (22 cases). This agrees with the observation of earlier workers (Kirbey *et al.* 1949) who commented that aneurysms of the common carotid artery were relatively rare, whilst those of the internal carotid were relatively common. Kirbey *et al.* (1949) also stated that at least 90 per cent of all aneurysms of the common carotid artery were due to syphilis, and predicted that this lesion would become even rarer. The more recent studies (McCollum *et al.*, 1979; Dehn and Taylor, 1984) suggest that atherosclerosis has indeed become the major causative pathological process, and we presume this to be the aetiology in this case as there was no pathological evidence of syphilis.

This case was typical in its original presentation with a pulsatile neck mass. Most patients either present in this way, or with the neurological consequences of thromboembolism from the aneurysm (Busuttil *et al.*, 1980; Dehn and Taylor, 1984). Other-presentations, including quinsy (Van Rensburg, 1964), hoarseness (Lerner and Braham, 1971), dyspnoea (Hori *et al.*, 1981; Dehn and Taylor, 1984), rupture into the pharynx (Rittenhouse *et al.*, 1972) and, as in this case, dysphagia, are all more rarely described. Dysphagia, when it occurs, may be the result of a high internal carotid artery aneurysm causing compression and cranial nerve palsies, (Lerner and Braham, 1971); or due to an aneurysm of the more proximal internal carotid artery, or of the bifurcation, directly expanding into the oropharyngeal cavity (Hori *et al.*, 1981). Kirbey *et al.* (1949) described one case of a very large syphilitic common carotid artery aneurysm causing dysphagia by compressing all the midline neck structures. Reviewing the literature we could find no account of a common carotid artery aneurysm causing such a caudal obstruction so as to mimic a post-cricoid carcinoma, as described in this case.

The rarity of aneurysms of the extracranial carotid, means that little is known of the natural history of the disease; however it is generally felt that the risks of stroke, and of rupture of the aneurysm, justify an aggressive surgical approach (McCollum *et al.*, 1979; Dehn and Taylor, 1984). Sir Astley Cooper pioneered this in the early ninteenth century, ligating a common carotid artery aneurysm. More recently resection of the aneurysm with arterial reconstruction has become the treatment of choice, provided the patient is fit for such a procedure. It is interesting to speculate how much such a surgical approach would have affected the disease process and the development of the dysphagia seen in this case.

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