Cervicothoracic 'no man's land': an unusual location of intravascular papillary endothelial hyperplasia in the supraclavicular fossa presenting a surgical challenge

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DESCRIPTION

A 45-year-old woman presented with an asymptomatic left supraclavicular lump after noticing shoulder asymmetry. Ultrasound revealed a well-circumscribed heterogenous, principally hypoechoic mass measuring 41×23×32 mm. This mass appeared to arise in the fat in the supraclavicular fossa, displacing adjacent muscles. Doppler showed vascularity within the mass. Incisional biopsy identified a non-lipomatous, reasonably well-circumscribed, intensely vascular lesion with deep extension into the left supraclavicular fossa. Histology was reported as skeletal muscle, with an adjacent thrombosed vessel with intravascular papillary endothelial hyperplasia. There was no evidence of neoplasia. MRI demonstrated a well-circumscribed mixed-signal mass in the left supraclavicular fossa, measuring 56×40×40 mm. This mass lay deep to the levator scapulae muscle and posterior to the left supraclavicular artery and vein, extending caudally to the level of the second rib and displacing adjacent structures.

Figure 1 Coronal T1 post-contrast MRI. A rounded, lobulated, well-defined heterogeneously enhancing mass in the left supraclavicular fossa with no overtly aggressive features, displacing the scalenus medius muscle laterally. The mass is posterolateral from the brachial plexus and possibly embedded in the scalenus posterior.

Figure 2 Intraoperative photograph of the mass in the left supraclavicular fossa. A—Mass (intravascular papillary endothelial hyperplasia); B—scalene muscle; C—scalene muscle; D—brachial plexus; E—clavicle.

On repeat MRI at 6 months, the mass measured 54×43×51 mm ([figure 1](#)). Surgical removal was attempted by otolaryngology but was unsuccessful due to the location of the mass and proximity to surrounding structures.

Multidisciplinary team (MDT) review of images to determine the most appropriate management options concluded the presence of a smoothly marginated 43×56×49 mm spindle-like lesion in the left supraclavicular fossa, lateral to the scaleni muscles and posterior to the vasa subclavia. Numerous small vessels were suggested, with no direct contact with the subclavian vessels. Possible contact with the brachial plexus was seen. There was a suggested 'neck' in its inferior part towards the left serratus anterior muscle, from which the lesion appeared inseparable.

The location of this neck lump therefore provided a challenge to its surgical management, with consultation including tertiary level otolaryngology, cardiothoracic surgery and plastic surgery indicated for its supraclavicular fossa location, caudal extension to the second rib and proximity to the brachial plexus, respectively. Consultations occurred with secondary level otolaryngology, regional plastic surgery and cardiothoracic surgery prior to referral to our unit. A combined otolaryngology and plastic surgery approach was agreed. Division of omohyoid enabled access to the mass ([figure 2](#)), which was found to lie deep to the brachial plexus, except for the suprascapular nerve,

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Images in...

which lay anterior. Muscular fibres of middle scalene and levator scapulae enveloped the mass and were therefore divided, as was the thoracic duct.

Intravascular papillary endothelial hyperplasia (IPEH) is a benign vascular lesion,¹ accounting for 2% of soft tissue and skin vascular tumours.² Similarities in clinical, radiological and histopathological features make it important to distinguish IPEH from angiosarcoma, to avoid misdiagnosis and subsequent overly aggressive surgical and systemic management of IPEH.³ Although other cases of IPEH presenting as a lateral neck mass exist,⁴⁻⁶ our case is unusual with regards to its location in the supraclavicular fossa.^{4,5,7} This, combined with its size, extension into the thoracic cavity and proximity to the brachial plexus, posed a unique challenge to surgical excision requiring MDT input,^{4,7} not previously reported.⁶

Learning points

- ▶ Although rare, intravascular papillary endothelial hyperplasia should be included as a differential diagnosis in a supraclavicular fossa lump.
- ▶ Location of lesions in the supraclavicular fossa can complicate and delay surgical management due to an overlap in surgical territories.
- ▶ Early multidisciplinary team involvement for lumps in the supraclavicular fossa is therefore indicated to minimise delays in definitive patient management.

This case therefore not only describes an unusual location of IPEH, but also highlights the difficulties associated with initial and definitive management of IPEH when located in the supraclavicular fossa, including the need for an MDT approach.

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