

Correspondence

Calibre persistent artery of the lip: an underdiagnosed entity?

Voth first used the term "calibre persistent artery" in 1962 to describe abnormal vessels in the stomach wall.¹ This term was applied to a primary arterial branch providing blood to the stomach wall, which ascended without further reduction of calibre into the submucosa. Similar lesions have been described in the jejunum and both can result in fatal gastrointestinal haemorrhage.^{2,3} In the stomach and jejunum, these lesions have also attracted different names including "exulceratio simplex Dieulafoy", cirroid aneurysm, and submucosal arterial malformation,^{4,5} but all describe an aberrant superficial artery in the submucosa.

Calibre persistent artery specifically of the lip was first described by Miko *et al* in 1980. The group described arteries with a diameter larger than normal, near a mucosal or external surface, which were similar to the lesions described in the gastrointestinal tract.^{6,7} There have been only two other reports of this entity on the lips.^{7,8} There have been five cases reported in total, predominantly occurring on the lower lip of elderly men, and presenting clinically as squamous cell carcinoma.⁶⁻⁸ Histologically, all five of the previously reported cases were ulcerated, inflamed lesions with aberrant vessels in the ulceration.

We present three further cases with a different clinical presentation, diagnosed in our department over an 18 month period, and discuss the relation to cutaneous cirroid aneurysm.

The first patient was a man of 36 who presented to the plastic surgeons with a lesion on his lower lip present for two to three years. This had been increasing in size over the previous year. Clinically, it was 3-4 mm and thought to be cystic, and the provisional diagnosis was that of mucous retention cyst. He was otherwise asymptomatic. He was a non-smoker and there was no history of trauma.

The second patient was a housewife of 35 who presented to the maxillofacial surgeons with a lesion on her lower lip, which caused her some discomfort. It had been present for as long as she could remember. She was a non-smoker. There was no history of trauma, but she thought that she had bitten it because it got in the way. Clinically it measured 1.5 x 1.5 mm and had the typical appearance of a mucocoele. At surgery it was noted that the operation site bled more than usual.

The third patient was an 85 year old man, who was retired but had worked as a lorry driver and farmer when young. He was a non-smoker having given up 30 years previously. The lesion had been present on the lower lip for two to three months and he was unsure whether there had been any trauma. When he presented to the maxillofacial surgeons the lesion was 2 x 2 mm and clinically it was thought to be a mucous cyst.

Macroscopically, all specimens were thought to be unremarkable, unorientable fragments ranging from 0.2 to 0.6 cm.

Microscopically, all showed similar histological features. The squamous mucosal sur-

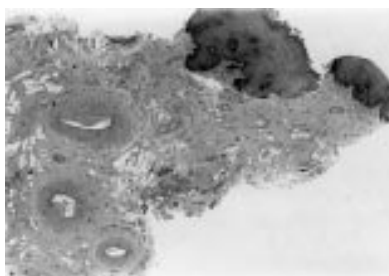


Figure 1 Scanning power of lesion with intact squamous mucosa. In the submucosa there is a large tortuous artery.

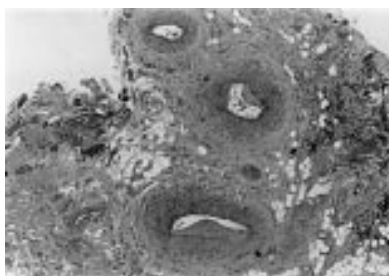


Figure 2 High power of artery showing prominent elastic lamina in the wall and focal intimal thickening.

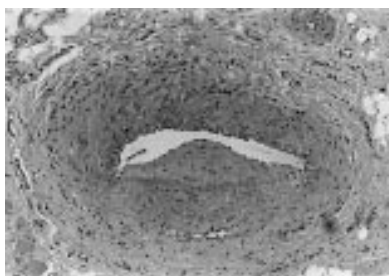


Figure 3 High power of artery again showing prominent elastic lamina in the wall and focal intimal thickening.

face was intact. There was no inflammation. In the submucosa, there was an inappropriately large and convoluted artery, lying near the orbicularis oris muscle and fat (figs 1 and 2). There was a prominent elastic lamina and patchy intimal thickening (fig 3).

Dieulafoy's vascular malformation of the stomach appears to have a similar histological appearance to that of calibre persistent artery of the lip. The histology is that of a large convoluted artery lying in the submucosa near a mucosal surface. However, the synonym of cirroid aneurysm is also used to describe these gastric and jejunal lesions. Cutaneous cirroid aneurysm, which also occurs frequently on the lip, has the histology of a predominantly venous, arteriovenous malformation⁹ and, therefore, the terminology is thought inappropriate for lesions with the histology seen in our cases.

Miko *et al*, who were the first group to describe calibre persistent artery of the lip, also performed extensive morphometric and detailed anatomical studies of the inferior labial artery.^{6,7} They found that there was a connecting branch of the inferior labial artery that traversed the free orbicularis oris muscle border and continued without the reduction in the calibre in the vicinity of the vermilion border. They also suggested that there should be a quotient derived from: the ratio of the distance of the artery from the epithelium to the diameter of the vessel. A ratio of less than

1.6-1.7 was regarded as abnormal. Two of our cases were consistent with this, having a ratio of 1.3 and 0.8, respectively. In the sample from the third patient, the intact musosa had been separated from the intact submucosa during processing, making measurements irrelevant.

Regarding the aetiology, it is difficult to draw any conclusions because there have been so few reports. However, those put forward include intense sun exposure, senile atrophy of tissue associated with vascular ectasia (again secondary to ageing), and injury from long term pipe smoking.⁶⁻⁸ Because two of our patients are young the ageing theory is less attractive, and none of our patients were smokers. Perhaps, as has been suggested in the gastric lesions, the artery is a congenital abnormality, which only comes to light when it is traumatised or erodes through the mucosa to result in bleeding. Although our cases give no specific details of trauma, the lip is a site that undergoes repeated minor trauma and is easily bitten. However, more cases are required before any firm conclusions can be made regarding aetiology.

In conclusion, we report three additional cases of calibre persistent artery of the lip, with a different clinical presentation to the cases reported previously. This lesion is reported in the literature as being rare, but our three cases were diagnosed in the past 18 months, and it is probable that this lesion is more common than was once thought. It is therefore a lesion that clinicians and pathologists should be aware of.

H KUA

K BLESSING

Department of Pathology,
Aberdeen Royal Infirmary,
Foresterhill, Aberdeen AB25 2ZD,
Scotland, UK

J HOLMES

Department of Plastic Surgery,
Aberdeen Royal Infirmary

M BURRELL

Department of Maxillofacial Surgery,
Aberdeen Royal Infirmary

- 1 Voth D. Das architektonische Prinzip der Magearterien in seiner Bedeutung für die Magenblutung. *Zentralblatt für Allgemeine Pathologie und Pathologische Anatomie* 1962;103:553-4.
- 2 Vetto JT, Richman PS, Kariger K, *et al*. Cirroid aneurysm of the jejunum. An under recognised cause of massive gastrointestinal bleeding. *Arch Surg* 1989;124:1460-2.
- 3 Deutsch G, Hanly M, Yeh KA. Jejunal cirroid aneurysm: a rare cause of massive lower gastrointestinal haemorrhage. *Am Surg* 1998;64:1179-82.
- 4 Mortensen NJ, Mountford RA, Davies JD, *et al*. Dieulafoy's disease: a distinctive arteriovenous malformation causing massive gastric haemorrhage. *Br J Surg* 1983;70:76-8.
- 5 Finkel LJ, Schwartz IS. Fatal haemorrhage from a cirroid aneurysm. *Hum Pathol* 1985;16:422-4.
- 6 Miko T, Adler P, Endes P. Simulated cancer of the lower lip attributed to "calibre persistent artery". *J Oral Pathol* 1980;9:137-44.
- 7 Marshall RJ, Leppard BJ. Ulceration of the lip associated with "calibre persistent artery". *Br J Dermatol* 1985;113:757-60.
- 8 Miko T, Molnar P, Vereckei L. Interrelationships of calibre persistent artery, chronic ulcer and squamous carcinoma of the lower lip. *Histopathology* 1983;7:595-9.
- 9 McKee PH. *Pathology of the skin*, 2nd ed. London: Mosby-Wolfe, 1996.