CASE REPORT

IDIOPATHIC RADIAL ARTERY ANEURYSM IN THE ANATOMICAL SNUFF BOX

N. P. WALTON, F. CHOUDHARY

An otherwise fit and well 40-year-old left-handed male computer operator presented with a minimally symptomatic lump of 2 years duration in his non-dominant anatomical snuffbox. There was no history of trauma. This was pulsatile and did not transilluminate despite being referred as a ganglion. MRI scan confirmed the presence of a 1.5 cm radial artery aneurysm fed by the radial artery and draining to the second digital artery. In view of his lack of symptoms the patient declined surgical intervention.
Literature review reveals radial artery aneurysms to be very rare and usually traumatic in origin. Iatrogenic pseudoaneurysms are widely reported following cannulation. We are unaware of previous descriptions of an idiopathic, isolated radial artery aneurysm.

Keywords : aneurysm ; idiopathic ; radial artery.
Mots-clés : anévrysme ; idiopathique ; artère radiale.

CASE REPORT

A left-handed, male 40-year-old computer operator presented with a small, nontender swelling in the right anatomical snuffbox of 2 years' duration. There was no history of trauma, previous cannulation, or vascular or connective tissue disease. Initially, it had slowly enlarged, but the size had been static for the past 12 months. It caused slight irritation with his golf swing but was otherwise asymptomatic. He was otherwise well, with no past medical or family history of note and was a non smoker. It is of note that he was referred as having a ganglion.

On examination there was a 1.5 × 1.5 cm swelling in the right anatomical snuffbox. This was fluctuant, well circumscribed and clearly pulsatile. It did not transilluminate so was felt unlikely to be a ganglion with transmitted pulsation. Equally, it was not tethered to any of the underlying tendons bordering the snuffbox, and the size did not alter with wrist movements. Mild pain could be induced with forced ulnar deviation of the wrist. Examination was otherwise unremarkable.

Further imaging was ordered, and ultrasound confirmed the presence of an aneurysm. MRI scanning was advised by investigating radiologists, and this confirmed the presence of a 1.5 × 1.5 cm aneurysm of the radial artery, feeding into the second digital artery (fig. 1, 2).

On being told the diagnosis, the patient declined surgical intervention in view of his lack of symptoms.

DISCUSSION

Radial artery aneurysms are extremely rare. They are usually associated with trauma, usually penetrating or iatrogenic (6). They are less common than aneuryms of the ulnar artery although this discrepancy is unexplained (1, 6). Incidents following blunt trauma have been described (13).

Department of Orthopaedics, Peterborough Hospitals, Peterborough, Cambs, UK.
Correspondence and reprints : N. P. Walton, 53 High Street, Dry Drayton, Cambridge, CB3 8BS, UK.

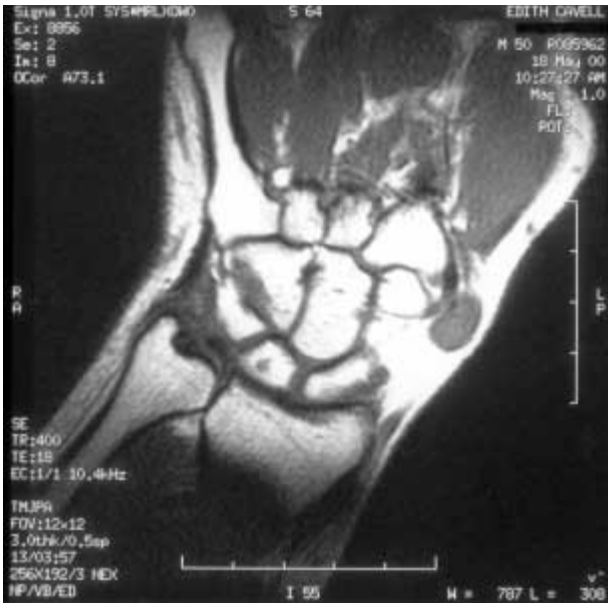

Fig. 1. — T1-weighted image showing aneurysm distal to scaphoid.

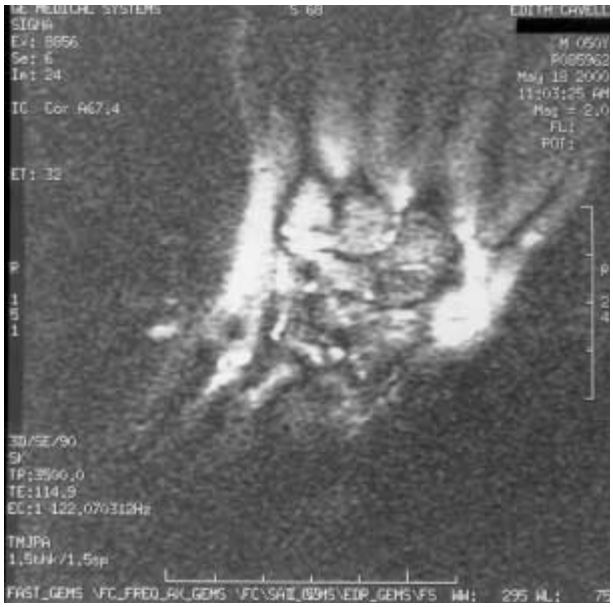

Fig. 2. — T2 –weighted showing aneurysmal radial artery and run-off.

Both true and false aneurysms have been described following cannulation of the radial artery with a rate of 6 per 12,500 and usually associated with infection (2). An episode of radial artery pseudo-aneurysm following excision of a wrist ganglion has also been reported (8). The above cases usually had a clear causative episode and an acute history.

Aneurysms of more insidious onset have been reported in arteriosclerosis (12) and neurofibromatosis, where vasculopathy is well recognized (4, 11).

The case we present has no obvious etiology and, as far as we are aware, is unique because of this. One could speculate with regard to a cause, for instance a loose wristwatch causing local pressure on the anatomical snuff-box, but this would remain speculation.

Diagnosis remains difficult, with pulsatility usually only detectable if the aneurysm is superficial. Misdiagnosis of a ganglion remains the pitfall. Equally, ganglia may be intimately related to the radial artery and present with transmitted pulsation. Peripheral aneurysms have been reported as presenting with distal embolism from an intraluminal clot (7).

Imaging plays a key part in diagnosis, and non invasive methods e.g. Duplex Doppler and MRI may supersede arteriography (10).

Treatment depends on collateral circulation, but early intervention is advocated to avoid complications such as embolization.

The method of treatment remains controversial. Options include simple ligation of the involved vessel and excision of the sac (9) ; ligating the main vessel, provided the other forearm vessel remains intact (3) ; repair of the defect directly (10) or by vein patching or grafting (5). Sadly, despite adequate counselling, our patient declined intervention.

The key message is that radial artery aneurysms do occur in numerous settings, and the diagnosis should be borne in mind. Adequate imaging is essential when clinical doubt remains concerning ‘ganglia’ if unpleasant intra-operative surprises are to be avoided. This is of particular relevance in that if an aneurysm is found intra- operatively, although early surgical intervention is generally advocated, the treatment of choice remains controversial.

REFERENCES

1. Duchateau J., Moermans J. P. False aneurysm of the radial artery. J. Hand Surg., 1985, 10-A, 140-141.
2. Falk P. S., Scuderi P. E., Sheretz R. J., Motsinger S. M. Infected radial artery pseudoaneurysm after percutaneous cannulation. Chest, 1992, 101, 490-495.
3. Gelberman R. H., Blasingame J. P., Fronek A., Dimick M. Forearm arterial injuries. J. Hand Surg., 1979-A, 4, 401-407.
4. Grey A. C., Vallelly S. R. Spontaneous false aneurysm of the radial artery in neurofibromatosis. Clin. Radiol.,.1999, 54,185-186.
5. Higgs P. E., Weeks P. M. Traumatic pseudo-aneurysm in ulnar artery vein graft. Plastic Reconstruct. Surg., 1993, 91, 726-728.
6. Ho P. K., Weiland A. J., McClinton M. A., Wilgis E. F. Aneurysm of the upper extremity. J. Hand Surg., 1987, 12-A, 39-46.
7. Lawhorne T. W., Sanders R. A. Ulnar artery aneurysm complicated by distal embolisation. J. Vasc. Surg., 1986, 3, 663-665.
8. Maw A., Renaut A. J. Pseudoaneurysm of the radial artery complicating excision of wrist ganglion. J. Hand Surg., 1996, 21-B, 783-784.
9. Milling M. P., Kinmouth M. H. False aneurysms of the ulnar artery. Hand, 1977, 9, 57-59.
10. Rothkopf D. M., Chu B., Gonzalez F. Radial and ulnar artery repairs ;Assessing patency with colour Doppler. J. Hand Surg., 1993, 18, 626-628.
11. Singh S., Riaz M., Wilmshurst A. D., Small J. O. Radial artery aneurysm in a case of neurofibromatosis. British J. Plastic Surg., 1998, 51, 564-565.
12. Thorrens S., Trippel O. H., Bergan J. J. Arteriosclerotic aneurysms of the hand. Arch. Surg., 1966, 92, 937-939.
13. Turowski G. A., Amjadi N., Sterling A., Thomson J. G. Aneurysm of the radial artery following blunt trauma of the wrist. Ann. Plast. Surg., 1997, 38, 527-530.

SAMENVATTING

N. P. WALTON, F. CHOUDHARY. Idiopathisch aneurisma van de arteria radialis in de anatomische snuifdoos.

Het probleem van een twee jaar bestaande en licht hinderende zwelling in de anatomische snuifdoos van de niet-dominante hand bij een 40-jarige gezonde computer operator wordt beschreven. Geen verhaal van trauma. De patiënt werd doorverwezen met de diagnosis „polskyste" alhoewel de zwelling pulseerde en niet-transillumineerbaar was. MRI bevestigde de aanwezigheid van een aneurysma op de a. radialis uitlopend in de 2de digitale arterie. De patiënt weigerde heelkunde, gezien zijn minieme last.

De literatuur vermeldt het zeldzaam voorkomen van dergelijke aneurysmata en het overwegend traumatisch ontstaan, ook jatrogeen na cannulatie. De auteurs vonden geen vroegere beschrijving van een dergelijk geïsoleerd en idiopathisch aneurysma ter hoogte van de arteria radialis en wijzen op het belang van de differentiële diagnosis met een banale polskyste.

RÉSUMÉ

N. P. WALTON, F. CHOUDHARY. Anévrysme idiopathique de l'artère radiale dans la tabatière anatomique.

Les auteurs rapportent le cas d'un patient de 40 ans, en bonne santé, gaucher, qui présentait depuis deux ans une tuméfaction quasi asymptomatique au niveau de la tabatière anatomique du côté non dominant. Il n'y avait aucun antécédent traumatique. La tuméfaction n'était pas pulsatile ; malgré un diagnostic initial de kyste, ce diagnostic n'était pas confirmé par le test de transillumination. L'IRM a confirmé la présente d'un anévrysme de l'artère radiale, d'un diamètre de 1,5 cm, alimenté par l'artère radiale et drainé dans la deuxième artère digitale. Le patient, asymptomatique, a refusé tout traitement chirurgical.

La revue de la littérature montre que les anévrysmes de l'artère radiale sont très rares et habituellement d'origine traumatique. Des pseudoanévrysmes iatrogènes sont fréquemment rapportés après cannulation artérielle. Les auteurs n'ont pas trouvé de description antérieure d'anévrysme de l'artère radiale idiopathique et isolé.