Aneurysms of the hand are rarely encountered and more rarely reported. The least common locations of these aneurysms are the palmar and digital arteries. The etiologies of these entities are quite varied, although they usually present as a pulsatile mass. Following a thorough evaluation, including arterial anatomic imaging, they should be repaired. The reported results following repair have been good. Herein we report a girl with a spontaneous palmar artery aneurysm and its management.

Arterial aneurysms of the hand are rare and most commonly involve the ulnar artery (1). Palmar artery aneurysms (PAA) and digital artery aneurysms (DAA) are even more uncommon. We found published reports of only 105 PAA cases (2) and 23 DAA cases (3). These aneurysms are usually posttraumatic, but spontaneous aneurysms or pseudoaneurysms in the hand have rarely been reported. Here we describe such a case.

CASE REPORT

A 16-year-old girl was referred by her primary care physician for evaluation of possible PAA. She had a several-month history of a pulsating mass in her left palm and denied any trauma. A duplex ultrasound (Figure 1) and a computed tomographic angiogram showed a focal aneurysm appearing to involve the deep palmar arch. Thrombus was present within it. She was initially managed conservatively but the aneurysm enlarged and interfered with her clarinet playing, and she elected to have it treated. Her preoperative Allen’s test was negative.

While under general anesthesia, her arm was exsanguinated and a tourniquet was inflated. An incision was made in the mid-palmar crease just proximal to the aneurysm’s location to avoid contracture. The superficial palmar aponeurosis was divided and the decompressed aneurysm was identified. It was originating off of a digital artery immediately after its takeoff from the deep palmar arch. The tourniquet was deflated and the aneurysm filled with blood. The feeding artery was test clamped, and there was preservation of excellent biphasic Doppler flow in all five digits. The aneurysm was resected without repair of the artery (Figure 2). The wound was closed and the hand was placed in a bulky dressing and splinted. The patient had a normal recovery and returned to all activities, including playing her clarinet.

From Texas Vascular Associates, Dallas, Texas (R. A. Shutze, W. P. Shutze); Surgical Care Associates, Lexington, Kentucky (Leichty); The Heart Hospital Baylor Plano, Plano, Texas (W. P. Shutze).

Corresponding author: William P. Shutze, MD, 621 N. Hall Street, Suite 100, Dallas, TX 75226 (e-mail: William.Shutze@BSWHealth.org)
Aneurysms of the hand are an uncommon occurrence. The most common location involves the ulnar artery. Aneurysms of the palmar arch and digital arteries are even rarer, and only a few cases have been reported in the literature. These aneurysms may or may be true (2), false (4), spontaneous (5), posttraumatic (6), mycotic (7), occupational (5), or congenital (8). These aneurysms may occur in the superficial palmar arch (1), deep palmar arch (9), common digital artery (10), or proper digital artery (11). A PAA (12) has arisen from a primary vascular tumor and another after carpal tunnel surgery (6).

The usual presentation of PAA and DAA is a painless pulsatile mass in the palm or digit. Digital clubbing (13) and median nerve compression symptoms (1) have been reported. The diagnosis has usually been made by arteriography, but more recently it has been established by ultrasound, CT angiography, and magnetic resonance (MR) angiography (4). The advances in ultrasound, CT, and MR have made arteriography no longer mandatory, and these noninvasive modalities can be used successfully for diagnosis and surgical planning. Prior to surgical treatment, the vascular anatomy must be well defined and an Allen’s test should be performed.

The recommended treatment for these aneurysms is resection and reconstruction unless the aneurysm is thrombosed and there is no distal ischemia. Also, if there is adequate collateral circulation, tedious microvascular repair with a vein graft may not be necessary, as in our case. Reported surgically repaired patients have generally done well without reports of long-term disability or recurrence. Despite the advances in endovascular technology, reports of endovascular treatment are lacking at this time. The dearth of reports in the literature may be related to the infrequent incidence of this condition and the perception that sacrifice rather than preservation of arterial flow would be required.