A ganglion cyst is described as a soft tissue tumor-like lesion filled with colloid material rich in hyaluronic acid and mucopolysaccarides of unknown origin.1 It is a very common mass in the hand and wrist and accounts for 50% to 70% of soft tissue tumors in this region. Other locations, such as the hip, knee, and dorsum of the foot and toes, have been described but are less common.2 We describe a case of a large ganglion cyst located on the back. To the best of our knowledge, a large ganglion cyst on this localization has never been described before.

CASE REPORT

A 60-year-old Thai-born woman was referred with a mass located on her back. The patient had never been hospitalized before and had no reported intake of prescription medicine and no history of surgery or other treatments to the area. The tumor had been increasing in size over the past 2 months. The patient associated the tumor growth offset with a minor blunt trauma to the back. The tumor was painless but aesthetically displeasing and gave some discomfort because of the size.

Physical examination revealed a large, nontender tumor located on the left side of the back close to the inferior part of the scapula. The mass was soft and fluctuant. The skin was unaffected, and the mobility of the shoulder was uncompromised (Fig. 1). A hematoma was the tentative diagnosis. An infectious cause was ruled out by full blood count and inflammatory markers that were normal. Tests for Echinococcus multilocularis, Mycobacterium tuberculosis, human immunodeficiency virus, and hepatitis A, B, and C were all negative.

Diagnostic testing included CAT/magnetic resonance imaging (MRI) scan and ultrasonography. The scans revealed a clearly defined mass with a capsule and septa, measuring 11.2 × 4.7 × 7.2 cm on MRI. It was located under the serratus anterior and latissimus dorsi muscle and inferior to the left scapula. Radiological examination of the MRI suggested a migrated breast implant (Fig. 2). However, the patient had never undergone breast surgery. An ultrasound and puncture was attempted twice without achieving drainage. A small volume of extracted fluid was acellular on microscopy.

The mass was removed completely under general anesthesia by simple incision through the skin and subcutis and dividing the serratus and latissimus dorsi muscles. It appeared to be a cyst with a thick capsule. A part of the capsule measuring approximately

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3 × 2 cm was partially necrotic and adherent to the thoracic wall under the scapula. No communication was identified between the cyst and costal periosteum or juxtaarticular tissue. The cyst was removed totally, and when it was opened, dark red and mucinous fluid was observed. A passive drain was placed in the cavity peroperatively. It was removed the day after surgery. No secretion drainage was reported. Histology examination revealed a cystic mass lined with a thick fibrous wall measuring up to 5 mm. The wall contained a few small foci of chronic inflammatory cells and focally a discreet interstitial bleed. The examination also found enhanced myxoid ground substance in the inner wall and elongated CD68-positive fibrohistiocytic cells lining the cyst lumen (Fig. 3). The diagnosis was a ganglion cyst with luminal necrotic and hemorrhagic debris.

The patient had an uneventful recovery with resolution of all symptoms and no recurrence within a 6-month follow-up.

**DISCUSSION**

We describe a rare case of a large ganglion cyst located on the back with no apparent communication between the cavity of the cyst and periosteum or an adjacent joint or tendon sheath. A similar lack of communication has also been described in a previous case report of a giant ganglion cyst of the calf.2

Most ganglia are less than 2.5 cm in size and arise from joints, tendons, bursae, ligaments, or periosteum. Possible causes include synovial herniation, tissue degeneration, repeated trauma, and posttraumatic attenuation of a joint capsule or a tendon sheath causing expansion of a fluid-filled capsular sac.3 Patients with a ganglion may not have symptoms besides swelling. Large or giant ganglion cysts seem to be very rare. They may give discomfort because of their size as described in this and previous reports.2

Clinical and radiological differential diagnoses for large ganglion cysts include hematoma, lipoma, synovial cyst, intramuscular myxoma, and in this case also a migrated silicone breast implant. Malignancies, such as sarcoma, must always be considered. Ultrasound is a cost-effective imaging modality, but MRI is the gold standard for radiological examination of soft tissue tumors.4
Treatment options for ganglion cysts include observation, aspiration, steroid injection, hyaluronidase, and surgical excision.\textsuperscript{1,4} Spontaneous resolution rates observed in studies vary from 40% to 58%.\textsuperscript{4} The most effective treatment is surgery with only limited effect of the other more conservative treatments mentioned.\textsuperscript{4} In this case, surgical management was effective in removing the mass and relieving the symptoms. Furthermore, only surgery with histologic examination of the specimen led to the correct diagnosis in this case.

**Fig. 3.** Microscopic images of the ganglion cyst wall. A, hematoxylin and eosin stain, ×100. B, Alcian blue/Sirius red, ×100. C, CD68, KP1, and immunostaining for histiocytic cells, ×100. D, Close-up view of the inner lining of the cyst with CD68-positive cells, corresponding to the content of the framed area in (C). CD68, KP1, and immunostaining, ×400.

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