

# A giant ganglion cyst of hip joint causing lower limb edema

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## ABSTRACT

تعتبر وذمة الطرف السفلي الناتجة عن الكيس العقدي الضخم لمفصل الورك فضلاً عن اعتلال الوريد العميق أو الوذمة الليفية حالة نادرة وتستحق الذكر كدليل في الممارسات السريرية. نعرض هنا حالة نادرة لمريض يبلغ من العمر 76 عام وعانى لمدة 3 شهر من تطور انتفاخ الطرف الأيمن السفلي، وورم أربي معروف لمدة 2 شهر، الذي اعتقد في بداية الأمر أنه ورم وعائي باستخدام الأشعة فوق الصوتية. أظهر فحص التصوير المقطعي والجراحة كيس عقدي ضخم يضغط على وريد الفخذ الأيمن. أدى قطع الكيس لاكمال ظهور الأعراض بعد العملية. ولمعرفتنا تعد هذه حالة نادرة جداً في الأدب لكيس عقدي ضخم لمفصل الورك ناتج عن وذمة الطرف السفلي.

Lower limb edema caused by a giant ganglion cyst of hip joint, rather than deep venous insufficiency or lymphedema, is unusual particularly for guiding clinical practice. In this study, we present a rare case of a 76-year-old man with a 3-month history of progressive swelling of right lower extremity and 2-month history of a known inguinal mass, which was initially thought as hemangioma by using ultrasound. But, subsequent computed tomography examination and exploration surgery revealed a giant ganglion cyst compressing the right femoral vein. Resection of the cyst led to complete resolution of symptoms postoperatively. To the best of our knowledge this is a very rare case of giant ganglion cyst of hip joint origin causing lower limb edema in the literature.

*Saudi Med J 2010; Vol. 31 (5): 569-571*

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*Received 2nd January 2010. Accepted 11th April 2010.*

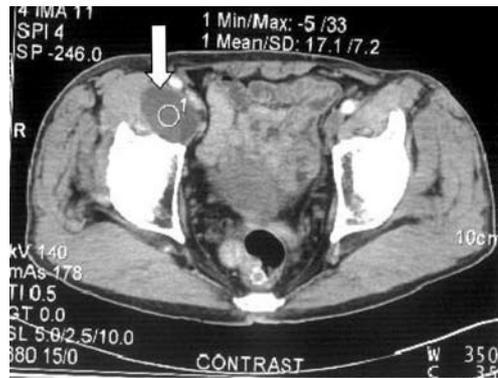
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Ganglion cyst (GC) is a benign lesion and commonly occurs near various joints of upper and lower limbs such as wrists, elbow, shoulder, and knee.<sup>1-3</sup> Although GC consistently presents the same pathologic content of a jelly-like substance, it may develop various symptoms owing to mass effect on neurovascular bundles, depending on size, shape, and specific location of lesion,<sup>2-5</sup> in a large measure, which influences clinical differential diagnosis and decide subsequent treatment. Here, we report a rare case of a giant ganglion cyst, adjacent, but not communicating with the hip joint, gradually causing unilateral lower limb swelling. The GC was initially thought to be hemangioma by using ultrasound, nonetheless, diagnosed correctly with the aid of subsequent computed tomography (CT) examination and exploration surgery.

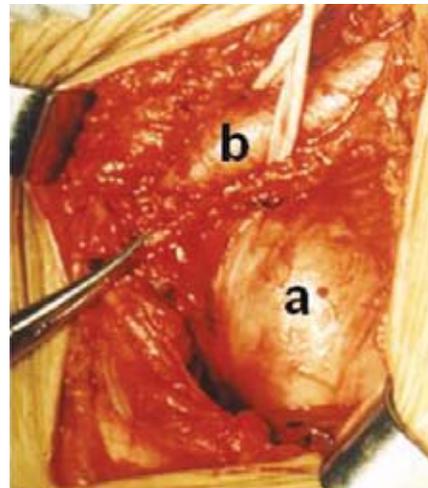
**Case Report.** A 76-year-old man presented with a 3-month history of progressive swelling of right lower extremity and 2-month history of a known inguinal mass. The patient denied any history of trauma, previous deep venous thrombosis, or any paresthesias. Physical examination demonstrated no skin pigmentation or ulceration, but the skin of the right lower extremity appeared cyanotic, warm to touch and tender, compared with left normal one. The erythema of right lower limb was aggravated by sitting or activity. The mass beneath the skin was cystic in consistency and tender, but no pain, murmur pulse, or a thrill was found. To evaluate the swelling prior to any treatment, the girth of thighs and legs were documented carefully at the same level. Plain radiograph of the right hip joint and laboratory tests did not demonstrate any significant abnormality. The ultrasound examination revealed the cystic nature of the swelling, suggesting hemangioma. To further define the feature of the cyst and its surroundings, subsequent CT scans were performed. The image manifested that a discrete 10 cm by 3 cm fluid-density lesion with mean value of 17.1 Hu had well-defined borders next to the wing of the ilium, iliac joint, and extended deep into pelvis and down to quadriceps tendon. Furthermore, no communication between the mass and hip joint,

was found. A remarkable compression of femoral vein was observed (Figure 1). Accordingly, radiological impression was a benign cyst, a giant ganglion cyst. No any aspiration of the cyst was performed before surgery. Surgical exploration was carried out and showed main body of the mass (Figure 2a) located on the surface of right quadriceps muscles and in the posterolateral aspect of the femoral artery (Figure 2b). No inguinal lymphatic nodes were found visibly. The cystic cavity contained thick and cleared mucoid fluid consistent with a ganglion cyst (Figure 3). The internal surface of the thin membrane was smooth without any loculations. The pathologic findings exhibited fibrous connective tissue lacking an epithelial lining, and support the final diagnosis of ganglion cyst. Half a month after dissection surgery, the patient was discharged free from symptom of lower limb swelling.

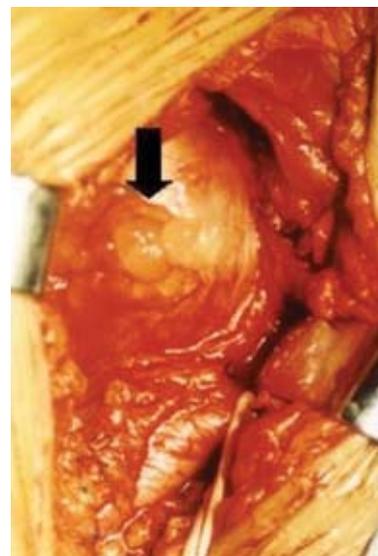
**Discussion.** Unilateral swollen lower limb results from impaired lymphatic drainage, usually caused by lymphatic dysfunction such as lymphedema, vascular diseases such as femoral aneurysms, and most frequently by deep venous thrombosis (DVT).<sup>6-8</sup> Here, we present a rare case of unilateral lower limb edema secondary to a giant ganglion cyst of hip joint, in which femoral vein was remarkably compressed, but vicinal nerve was not impinged. Although pathology of ganglion cyst featured by clear yellowish gelatinous fluid (Figure 3, arrow) in the non-epithelial capsule is known,<sup>1,9</sup> the etiology and epidemiology of ganglion cyst are not well defined, particularly, rare giant ganglion cyst occurring adjacent to the hip joint.<sup>2,3</sup> In addition, most of GC patients had no medical history of trauma or adjacent joint disease.<sup>1,5,9</sup> Ganglion is gradually enlarging without evident symptom. Therefore, it was hypothesized a priori that cystic fluid leaks from the adjacent capsule or from the tendon sheath through a weak area via a one-way valve mechanism, therewith forming an enclosed chamber.<sup>1,3,9</sup> In this case, the ganglion cyst extended up to the pelvis and down to the upper part of quadriceps tendon, the main body of which situated near right hip joint (Figure 1). Thus, the cystic source was more inclined to originate from the hip joint rather than quadriceps tendon although GC lied on the surface of right quadriceps, non-communicative to right hip joint or tendon sheath. The fact that we did not demonstrate a joint connection on imaging or at surgery can be easily explained. The pedicle is small. High resolution MRI with thin slices would have shown the pertinent anatomy better. Magnetic resonance or even CT arthrography could have tested for a joint communication with the cyst. Accurate preoperative diagnosis is of great importance in planning the surgical excision. Although GC can be treated non-operatively with fine needle



**Figure 1** - Computed tomography shows cystic lesion (arrow).



**Figure 2** - Intra-operative photograph shows a) giant ganglion cyst of the hip joint and the b) femoral artery in the right lower limb.



**Figure 3** - Incision of the ganglion cyst revealed thick and clear mucoid fluid (arrow).

aspiration and corticosteroid injection, performance of surgical eradication may diminish the recurrence rate and is preferentially recommended particularly for giant ganglion cyst.

**Acknowledgment.** *The authors would like to acknowledge the help of Dr. Song Zhao from the Department of Radiology, in the technical assistance of initial manuscript preparation.*

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