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Chirurgie de la main 34 (2015) 197-200

### Original article

# Surgical treatment of mucous cysts by subcutaneous excision and osteophyte resection: Results in 68 cases at a mean 6.63 years' follow-up

Traitement des kystes mucoïdes digitaux par exérèse sous-cutanée et émondage articulaire : à propos de 68 cas évalués à 6,63 ans de recul

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Received 18 March 2015; received in revised form 7 May 2015; accepted 2 June 2015
Available online 15 July 2015

#### Abstract

The goal of this study was to assess the results of treatment of mucous cysts by subcutaneous excision and osteophyte resection without an associated skin procedure. From 1993 to 2013, 81 mucous cysts were operated on. In 27 cases, a nail deformity was present. Obvious osteoarthritis was present in 84% of cases. Among them, 67 patients (68 cysts) were subsequently assessed through a phone questionnaire after a mean follow-up of 6.6 years. Patients who reported a recurrence or suspected one were reassessed in consultation. Among the 68 evaluated cases, two developed an infection and one had delayed skin healing; these complications occurred on cysts with a previous fistula. In one case (1.5%), a recurrence was observed four months after excision of a subungual cyst. All nail deformities had resolved; 53 patients felt no discomfort and 65 were very satisfied or satisfied with the procedure and would undergo surgery again. The recurrence rate of 1.5% is consistent with that of other studies where the same procedure was used, without cutaneous grafting, ranging from 0 to 2%. This result is better than in studies where a graft or a flap was performed without systematic joint debridement. Our procedure is sufficient to effectively treat mucous cysts with less morbidity. Complications are rare and occur only in cysts associated with a fistula, justifying their early surgical treatment.

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Keywords: Mucous cysts; Distal interphalangeal joint; Osteoarthritis; Osteophyte resection; Joint debridement

#### Résumé

L'objectif de cette étude était d'évaluer les résultats du traitement des kystes mucoïdes par exérèse sous-cutanée de la poche kystique et émondage articulaire sans geste cutané associé. De 1993 à 2013, 81 kystes mucoïdes ont été opérés. Dans 27 cas, une dystrophie unguéale était notée. Une arthrose évidente était présente dans 84 % des cas. Parmi eux, 67 patients (68 kystes opérés) ont répondu à un questionnaire par téléphone, avec un recul moyen de 6,6 ans. Les patients qui pensaient avoir une récidive ont été revus en consultation. Parmi les 68 kystes réévalués, deux patients ont présenté une infection et un autre un retard de cicatrisation; ces complications sont survenues sur des kystes déjà fistulisés. Une récidive était survenue quatre mois après l'exérèse d'un kyste sous-unguéal. Toutes les déformations unguéales ont régressé, 53 patients ne ressentaient aucune gêne et 65 étaient très satisfaits ou satisfaits de l'intervention et se referaient opérer. Le taux de récidive de 1,5 % est concordant avec celui d'autres études basées sur la même technique, sans geste cutané associé, variant de 0 à 2 %. Ce résultat est meilleur que celui des techniques réalisant une plastie ou une greffe cutanée sans débridement articulaire systématique. Notre prise en charge suffit à traiter efficacement les kystes mucoïdes avec une moindre morbidité. Les complications sont rares et sont observées uniquement dans les kystes déjà fistulisés.

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Mots clés: Kystes mucoïdes; Articulation interphalangienne distale; Arthrose; Ostéophytes; Émondage articulaire

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#### 1. Introduction

Mucous cysts are a relatively common condition among mature patients, occurring near a distal finger joint in arthritic fingers [1–7]. These cysts are usually small and firm with gelatinous content and located near the distal interphalangeal (DIP) joint of the long fingers and the interphalangeal (IP) joint of the thumb (Fig. 1a). More rarely, they are lateral, palmar or subungual. In cases of distal extension – typically superficial – they can compress the germinal matrix and cause nail deformity. They are responsible for skin distension. It is not uncommon that a discharge with fistula and even a secondary infection can occur, either after trauma or spontaneously.

Their pathogenesis has been widely debated, but it is currently accepted that mucous cysts are composed of a hernia sac whose pedicle originates from osteoarthritic degeneration at the level of an underlying osteophyte [3,5–10] (Fig. 1b).

Non-surgical treatment is associated with a high percentage of recurrence, ranging from 30 to 100%, and is not free from infectious complications [11]. Surgery is the best treatment to reduce the risk of recurrence.

In the literature, in addition to cyst excision, a rotationadvancement flap or a skin graft is advocated by many authors



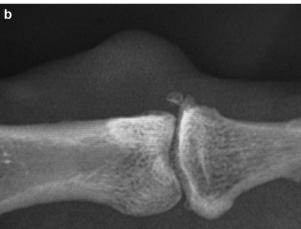


Fig. 1. Mucous cyst of the interphalangeal joint of the right thumb. Clinical appearance (a). X-ray: mild osteoarthritis of the interphalangeal joint with osteophyte formation (b).

to minimize recurrence, with or without osteophyte debridement [2,5,8,10–16].

Since this pathology has an articular origin, not an epidermal one, our hypothesis is that the treatment of mucous cysts is based primarily on osteophyte removal. The goal of this study was to demonstrate that joint debridement, in addition to excision of the cystic pouch without an associated skin flap or graft, is sufficient in effectively treating mucous cysts with a recurrence rate that does not exceed that of other techniques.

#### 2. Patients and method

Between 1993 and 2013, 81 mucous cysts were operated in our surgery unit by 19 hand surgeons, 57% by the same senior surgeon. All operative reports were reviewed to ensure that the same surgical technique had been used. The surgery was performed under local anesthesia, with a tourniquet and magnifying loupes. After making a dorsal H-incision centered over the joint, the cyst was exposed and the pedicle of the hernia sac was followed to its origin (Fig. 2). The cyst and its peripheral wall were excised and joint irregularity debridement was completed. After synovectomy (when necessary) and joint lavage, the skin, even if thin and distended, was preserved and sutured with interrupted stitches using non-absorbable suture. All patients were clinically examined between four and eight weeks after surgery.

The study population consisted of 79 consecutive patients, 2 of whom had procedures performed on two cysts (81 cases). There were 56 women and 23 men. The mean age at surgery was 62.5 years (range: 31–85). Fifty-one cysts (63%) were located on the dominant hand; the middle finger had the highest rate of surgery (Table 1). A nail deformity was present in 27 cases. Preoperative radiographs were available for 64 cases and gross evidence of osteoarthritis was present in 54 cases (84%).



Fig. 2. Intraoperative views of a mucous cyst showing dissection of the cystic wall

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