African Journal of Biology and Medical Research
ISSN: 2689-534X
Volume 3, Issue 3, 2020 (pp. 127-132)
www.abjournals.org

ONYCHOCRYPTOSIS AFFECTING THE LATERAL AND MEDIAL FOLDS OF BOTH BIG TOES: A RARE CASE REPORT AND REVIEW OF THE LITERATURE

Friday Emeakpor Ogbetere[1*] and Gad Ohiogbauan Erhuanga[2]

[1]Urology Division, Department of Surgery, Edo University, Iyamho, Edo State, Nigeria

[2]Department of Surgery, Central Hospital Auchi, Edo State, Nigeria

*Corresponding Author *Email: fridayemeakpor@gmail.com*

ABSTRACT: *Onychocryptosis, otherwise known as ingrown toenails, is a disease of the nail apparatus frequently found in young adults characterized by pain, inflammation, and functional disability. It commonly affects the hallux and often associated with congenital anomalies of the nail folds and nail plates, medial rotation of the nail plates, and wearing of tight shoes. Though it is a common pathology among teenagers and young adults, onychocryptosis involving the medial and lateral folds of both big toes is very rare. Reported herein is a case of a 17-year-old undergraduate who presented to our facility with neglected chronically inflamed and infected ingrown toenails of both big toes of four years duration. On physical examination, he had hypertrophy of both lateral and medial nail folds of the two big toes with discharging purulent exudates. The right hallux was significantly bigger with bilateral hallux valgus deformity. He subsequently had partial nail resection and matricectomy after antibiotics treatment. This case report brings to the fore a very rare occurrence of onychocryptosis affecting both lateral and medial folds of both big toes and re-awakens the surgeons' interest in their prevention and management.*

KEYWORDS: *Onychocryptosis, Ingrown Toenails, Matricectomy, Nail Folds.*

INTRODUCTION

Onychocryptosis is a painful pathology of the nail unit that affects young people with male preponderance.[1] An ingrown toenail is a relatively common nail disease with approximately 10,000 new cases seen each year in the UK.[2]

The aetiology of onychocryptosis appeared unknown as many theories have been advanced to explain its pathogenesis. Baran and colleagues implicated malalignment of the nail plate with resultant lateral deviation in relation to the long axis of the distal phalanx as the causative factor following their review of thirty patients.[3] Other possible causal theories include inherited architecture of the nail unit resulting in an imbalance between the edges of the nail and the cuticle, and improper trimming of nails in a convex fashion.

The condition is unilateral in 80% of cases and mostly affects the hallux.[4] A single hallux is commonly affected with the involvement of the lateral aspect of the toenail in about 80% of cases.[5] In 7-21% of patients, either the medial or lateral fold of both halluces is affected.[4,6] Involvement of both medial and lateral folds of the two big toes is very rare.[4,5] Here we present a case of both medial and lateral ingrown toenails involving the two halluces. This case report

lends credence to the occurrence of such uncommon nail unit pathology and to re-awaken interest in their prevention and management.

Case Summary: Master AD was an 18-year-old undergraduate who presented to our clinic with a history of bilateral swelling of the nail folds, and worsening pain of four years' duration. With the progression of pain, he developed some gait deformity and could not walk much distance due to the excruciating pain. He noticed purulent discharge around the nail folds of both big toes three months prior to presentation and had used several medications and concoctions during this period without respite. He occasionally cuts his nail with a razor blade before the onset of the ingrown toenails. No history of wearing tight-fitting shoes. He is not a diabetic and had no history of change in the colour of skin over the swelling, trauma, or fever.

On clinical examination, he was anxious with stable vital signs. Both big toes were swollen, tender, and discharging purulent exudate. The right hallux was markedly bigger than the left (**Figure 1)** and no peripheral lymph nodes enlargement. The X-ray done showed normal phalangeal bones with soft tissue inflammation. The m/c/s of the discharge yielded growth of *Staphylococcus spp* sensitive to the quinolones. He had partial resection of the nails and matricectomy after treatment with ciprofloxacin according to sensitivity (**Figures 2a, 2b, and 3)**. Immediate post-operative condition was satisfactory. He was discharged 2 days after and has remained stable at follow up. **Figure 4** showed the clinical photograph of both big toes five days' post-surgery.

Figure 1: Ingrown toenails affecting the lateral and medial folds of both big toes.

African Journal of Biology and Medical Research
ISSN: 2689-534X
Volume 3, Issue 3, 2020 (pp. 127-132)
www.abjournals.org

Figure 2a: immediate post-operative picture of the left big toe.

Figure 2b: immediate post-operative picture of the right big toe.

African Journal of Biology and Medical Research
ISSN: 2689-534X
Volume 3, Issue 3, 2020 (pp. 127-132)
www.abjournals.org

Figure 3: resected nails from both big toes

Figure 4: Both big toes five days after partial resection of the nails and matricectomy

African Journal of Biology and Medical Research
ISSN: 2689-534X
Volume 3, Issue 3, 2020 (pp. 127-132)

www.abjournals.org

DISCUSSION:

Onychocryptosis a painful pathology of the nail apparatus that commonly affects teenagers and young adults and often becomes chronic if left untreated with resultant disability and reduction in quality of life.[2] The big toe is most frequently affected with the lateral aspect of the toenail involved in up to 83% of cases.[5] While some scholars have recorded involvement of either the medial and lateral folds of both halluces in about 7-22% of cases in our environment, none reported involvement of both the lateral and medial folds of both halluces.[5,6] The rarity of this occurrence makes this case report noteworthy.

Some well-established causes of onychocryptosis in young people include inappropriate cutting of nails, wearing of tight-fitting shoes, trauma to the toes or nails, pathologic curvature of the nail plate, differential growth of nails and toes during puberty, hyperhidrosis, fungal infection, surgical iatrogenic conditions, biomechanical alterations, and overweight.[4,6] Congenital ingrown toenails, which is postulated to be due to intrauterine trauma or hereditary have also been reported.[7] This index patient admitted to incorrect trimming of his nails with a razor blade and has some hallux valgus deformity (**figure 1**).

Patients with ingrown toenails frequently present with clinical features of pain, swelling, redness, suppuration, nail fold hypertrophy, granulation, and ulceration.[5,6] In neglected cases or those with systemic diseases like diabetes mellitus, osteomyelitis, or gangrene of the toes may occur.[6] Also, Benjamin and Ejike noted that most patients in our environment seek medical attention within six months of the emergence of symptoms with increased symptom severity in those presenting late.[5]This patient presented after four years of occurrence of symptoms, which probably explained the gross hypertrophy of the right hallux and the concomitant functional disability (**figure 1**).

The diagnosis of onychocryptosis is usually clinical.[5,6] However, in cases complicated with purulent discharge and osteomyelitis, investigations such as exudate m/c/s, and an X-ray of the toes and foot may be required. In addition, differential diagnoses such as primary osteomyelitis of the phalanx, subungual exostosis, and subungual melanoma should be ruled out. [8]

Several treatment modalities exist, which range from conservative medical options to extensive surgical management approaches.[8]The treatment modality employed should be dependent on the severity and stage of the disease. Four stages of onychocryptosis are identified according to Mozena's classification.[9] Whereas stage I is the inflammatory stage, stage II is regarded the abscess stage. Stage III is characterized by granulation tissue formation and hypertrophy of the nail fold while stage IV is the evolution of stage III with chronic deformity of the toenails and nail folds. Our patient had stage IV ingrown toenail disease. Conservative treatment is favored in mild cases, while surgery is necessary for stages II, III and IV onychocryptosis.[5,6,7] Accurate cutting of nails, avoiding tight shoes, application of special plastic material between the ingrown toenail and flesh, and chiropody are considered as conservative treatment to prevent infection.[8] Surgical treatment is based on partial or total removal of ingrown nail, followed by surgical or chemical destruction of lateral matrix to prevent nail reforming in that area.[1,4,7]

In our report we describe a case of chronically inflamed bilateral ingrown nail left untreated for four years with suppuration and granulation who was treated with partial resection of the nails and matricectomy. The different options used for managing ingrown toenail are a pointer to the absence of a commonly accepted procedure with minimal failure rate.

CONCLUSION

Onychocryptosis remain a recurrent cause of morbidity globally with a far-reaching impact on the quality of life of the affected persons. The involvement of both lateral and medial folds of the two halluces is very uncommon. Correct management of ingrown toenails require the recognition of the stage and thorough assessment of the affected tissues. With the availability of numerous options of management, surgical treatment which is indicated in cases of pain, recurrent onychocryptosis, surgical relapse, and failure of conservative treatment should be tailored to the patient's particular clinical situation.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the forms the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understand that his name will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

None

Competing interests

No conflicting interest declared

REFERENCES

[1] 1. Murray WR, Bedi BS. The surgical management of in-growing toe nail. Br J surg 1975;62:409-12.
[2] 2. Skyes PA. In growing toe nails: time for critical appraisal? J R Coll. Surg. Edinb 1986; 31(5): 300-4.
[3] 3. Baran R, Haneke E, Richert B. Pincer nails: definition and surgical treatment. Dermatol Surg 2001;27:261-6.
[4] 4. Delauro T. Onychocryptosis. Clin Podiatr Med Surg 1995; 12(2): 201-13.
[5] 5. Olakulehin OA, Oluwadiya KS, Akanbi OO, Babalola OR. A Physiological Approach to Manage Ingrown Toe Nails. Sch J App Med Sci 2015;3:272-275.
[6] 6. Benjamin TI, Ejike AT. Ingrown toe nail as seen in Bayelsa state Nigeria. Int J Adv Med 2017;4:614-9.
[7] 7. Grassbaugh JA, Mosca VS. Congenital ingrown toenail of the hallux. J Pediatr Orthop 2007;27(8):886– 9.
[8] 8. Khunger N, Kandhari R. Ingrown toenails. Indian J Dermatol Venereol Leprol 2012;78:279-89
[9] 9. Mozena JD. The Mozena Classification System and treatment algorithm for ingrown hallux nails. JAPMA 2002;92:131.