

## CASE REPORT

### **A CASE REPORT OF RECURRENT PVNS IN METATARSAL PHALANGEAL JOINT /PROXIMAL PHALANX TREATED BY AMPUTATION OF SECOND TOE**

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#### **Abstract:**

Pigmented villo nodular synovitis is a benign, proliferative disorder of synovium it often affects the knee, and rarely affects the foot. In this case report a 41yr male presented with recurrent PVNS of second toe, presented with slowly growing swelling over dorsum of second toe. this patient had a recurrence of swelling after one and half year of synovectomy which was not followed by radiotherapy. Patient was non compliance to radiotherapy and unseparable growth from bone tendon and neuromuscular structures was excised with amputation of second toe and no recurrence till two year follow up's without radiotherapy recurrence can be prevented by amputation of involved toes in the foot.

**KEYWORDS:** Toe, PVNS, synovitis

#### **INTRODUCTION**

Pigmented villonodular synovitis is characterized by the slowly progressive, exuberant, benign proliferative process of synovial tissue and is usually mono articular. PVNS may affect the synovium of the joints, bur-sae, and tendon sheaths, and is most common in the hips, knees, and rare (2.5% cases) in small joints of foot and ankle. Granowitz et al. first classified PVNS into two distinct clinical forms, diffuse and localized (nodular) both form can occur in the foot and ankle<sup>1</sup>. A nodular variant occurs in the extensor/flexor tendon sheath of digits, surgical treatment includes open /arthroscopically synovectomy, teno synovectomy, and amputation of involved toes which followed by Radiotherapy. PVNS is locally aggressive and tends to recur if incompletely excised.

## CASE REPORT:

A 41yr old male presented with an insidious gradual progressing painless soft tissue swelling over the dorsum of right fore foot of sixteen-year duration. He under went the excision 10yr back and histologically reported as a case of PVNS, swelling was recurred in one and half yr. of initial surgery and increased progressively over the last 10 years to present size. On clinical examination 7x5 cm size spherical swelling over first to third toes and which extended up to the distal phalanx of second toe distally and in first and second web space proximally .The swelling was non tender ,non fluctuating ,non pulsatile, non compressible soft in consistency, overlying skin are moveable, movements of the second toe restricted, and forefoot movements are with in normal limit and his general condition was with in normal limit .All routine investigation were with in normal range ,X- ray of the right foot shows the soft tissue shadow overlying 2nd toe and no obvious bony lesion was seen(fig. 1), FNAC was performed and suggestive of PVNS . MRI findings were erosion of distal part of proximal phalanx of great toe with altered bone marrow signal intensity appearing hypo intense in T 1 weighted images hypo intense in T 2 weighted and fat suppression. large heterogeneous mass is seen in proximal part of second toe encircling proximal phalanx, flexor and extensor tendons and neurovascular bundle mass lesion measures 65x52x42 mm(fig.2).

The swelling was resected under spinal anesthesia through dorsolateral approach which exposes the MTP joint of second toe. There was grey Brown color growth over the metatarsal head to the proximal phalanx of 2nd toe the growth was un separable from extensor tendons, vessels and nerves of second toe therefor amputation of second toe performed. Histopathology came out with PVNS(fig.3). The post operative recovery was uneventful(fig.4), and he had been referred for radiotherapy but not taken, and after two year follow up no recurrence found(fig.5).

Figure 1 X ray AP foot shows soft tissue shadow over second toe and first and second interphalangeal space



Figure 2 .histopathology slide shows hemosiderin laden cells

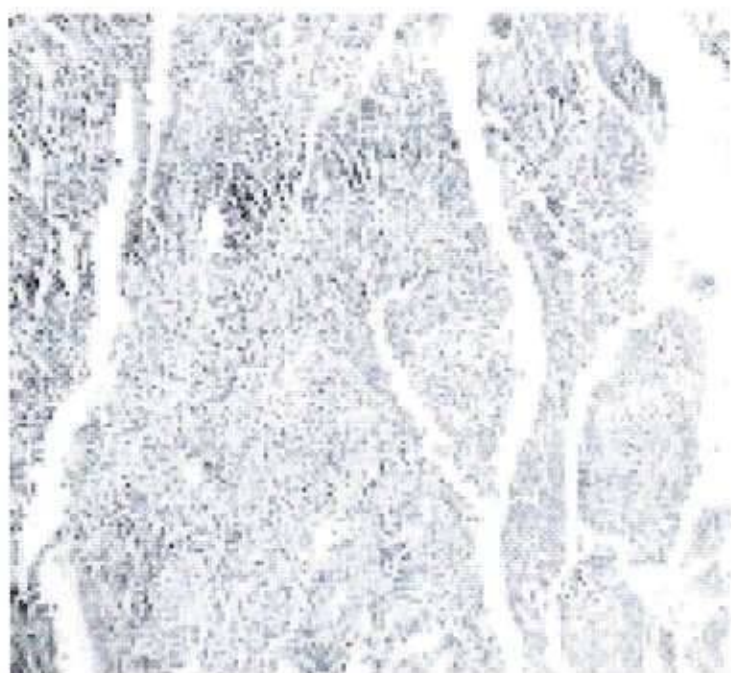


Figure 3 MRI image coronal section shows heterogeneous soft tissue mass on second toe

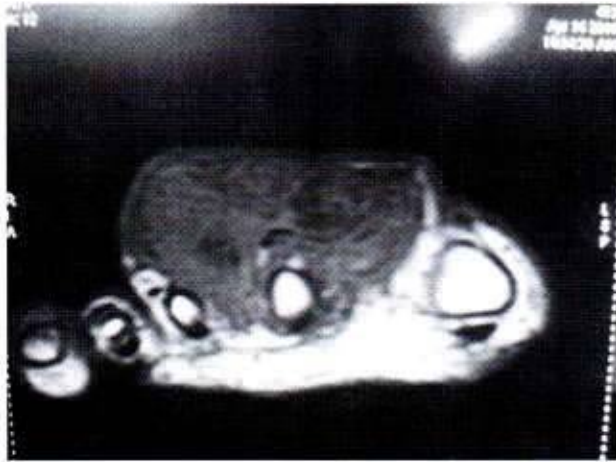
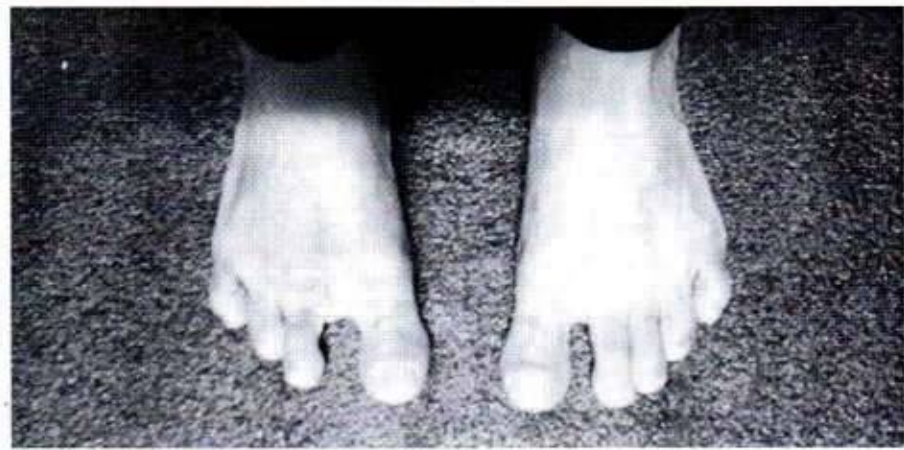


Figure 4 Immediate post operative image of foot after stitch removal



Figure 5. Photograph at one year follow up of patient foot without recurrence .



## DISCUSSION

PVNS is an aggressive disease and rare in foot and lack of superficial muscle layers assist in allowing spread to adjacent articular spaces complete excision is therefore difficult to achieve and patient compliance for radiotherapy is needed to control recurrence. In our case study there was already synevectomy done but due to patient non compliance to radiotherapy recurrence was occurred so that surgical amputation of the toe is decided to prevent recurrence of PVNS.

Soft tissue tumors of foot often present with complaints of pain or difficulty in wearing footwear, our swelling was pain less with normal range foot movement. There was localized or nodular variety swelling of second toe. This patient had a recurrence of disease one and half year after the first surgical excision that surgery was not supplemented by Radiotherapy. MRI was done in this case to see the extent of disease complete excision was difficult to achieve as this was a recurrence of swelling with pressure effect on the bone we did an amputation of 2nd toe and we refer patient for Radiotherapy to prevent further recurrence.

There is paucity of literature on PVNS affecting second toe, John A.Raison et al. reported a case of second metatarsophalangeal joint PVNS <sup>2</sup>, Edward et al. diagnosed a case of PVNS of second inter phalangeal joint by ultrasound with color Doppler <sup>3</sup>. A. lunawat et al. reported case of PVNS in great toe <sup>4</sup>. also Wg Cdr P kinra reported pigmented villonodular synovitis in dorsal of foot involving second metatarsal and treated by synevectomy and radiotherapy role <sup>5</sup>. PVNS usually mono articular but Zaho et al. reported a rare case of multifocal PVNS in a child affecting over 20 joints <sup>6</sup>. H Sharma et al. considered toe amputation for foot phalangeal PVNS <sup>7</sup>. M lee et al. documented the rare PVNS in the foot one case out of seven cases PVNS in second toe <sup>8</sup>. rochwerger et al. reported an eight cases of PVNS in the foot and ankle, three cases affected toes and recurrence occurred in one toe and led to partial amputation <sup>9</sup>.

Our case report of PVNS involving the second MTP/IP joint is the rare case report in the literature and highlights the importance of considering PVNS as a D/D in adults presenting with swelling of the foot. The diagnosis of recurrence of PVNS is confirmed by clinical history, FNAC, MRI, and histopathology. In MRI shows joint effusion with dark signal the synovium and low signal intensity occur in T1 and T2 weighted due to paramagnetic effect of hemosiderin. In histopathology grossly mass is grey brown colored with rubbery consistency and microscopically villous storm and hemosiderin granules and lipids are prominent in macrophages with multinucleate giant cells present PVNS of toes treatment includes total synovectomy and adjuvant radiotherapy as surgical

method but patient compliance is an issue with radiotherapy then recurrence can be prevented by amputation of involved toes in the foot is the method of choice.

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