Draft Manuscript for Review

"Giant Hemangioma of the Hand in a Child - Case Report"

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ABSTRACT

The authors discuss a case of hand giant hemangioma in a child, surgically treated with success. The frequency of this type of tumour in children, and the therapeutic options recommended by different authors are discussed.

Keywords: Giant hemangioma; hand; child

INTRODUCTION

For many reasons, palmar tumors are a challenge for the surgeons. The hand is a highly specialized structure, and represents a relationship tool with both the environment and other people. The hand is essential to virtually all human activities. The hand's complex anatomy results from the presence of several functional structures within a small area (tendons, nerves, and blood vessels). In children, care must be taken not to damage these structures during a surgical procedure, since such anatomical structures are difficult to identify, and any damage can greatly affect the patient's quality of life.

In 1940, Watson and Carthy[1] reported that hemangiomas account for 25% of all hand tumors. In 1994, Kransdorf[2] published a study on benign tumors in which hemangiomas represented 13% of hand tumors in people aged from zero to fifteen. In 1996, Mendel and Louis[3] carried out a study on vascular tumors in the upper limbs, showing thar the hemangioma is the fourth more frequent hand vascular tumor.

Other authors, such as Palmierí[4] , Glanz[5], Weisman[6] and Milner[7] published studies on the surgical treatment for hand hemangiomas. In 1986, Milner and Sykes[8] published a paper describing the surgical approach of hand diffuse cavernous hemangiomas. The largest hemangioma described in this paper had a diameter of 6 x 7 cm.

In the present study, the authors report the case of a 13-year-old male

patient with a palmar giant hemangioma. The surgical approach and postoperative course of the disease are described and the results are compared with those of other authors.

CLINICAL CASE

A 13 year-old Male patient, had a soft tissue tumor with the following characteristics: almost elliptical shape, size of the lesion 30x40x105 mm. The tumor extended throughout the palm of the right hand, invading the thenar space extending upto forearm. His father reported that the child had no swelling over his hand at birth

The physical examination showed a limited flexion disability of little finger metacarpophalangeal joints and a limited flexion of proximal and distal interphalangeal joints, both affecting ring and little fingers, except for the thumb. MRI suggested neoplastic lesion involving volar distal forearm,wrist,and muscles involved were opponent pollicis,Abductor pollicis brevis,Flexure pollicis brevis, and Flexure pollicis longus belly in forearm(fig1)

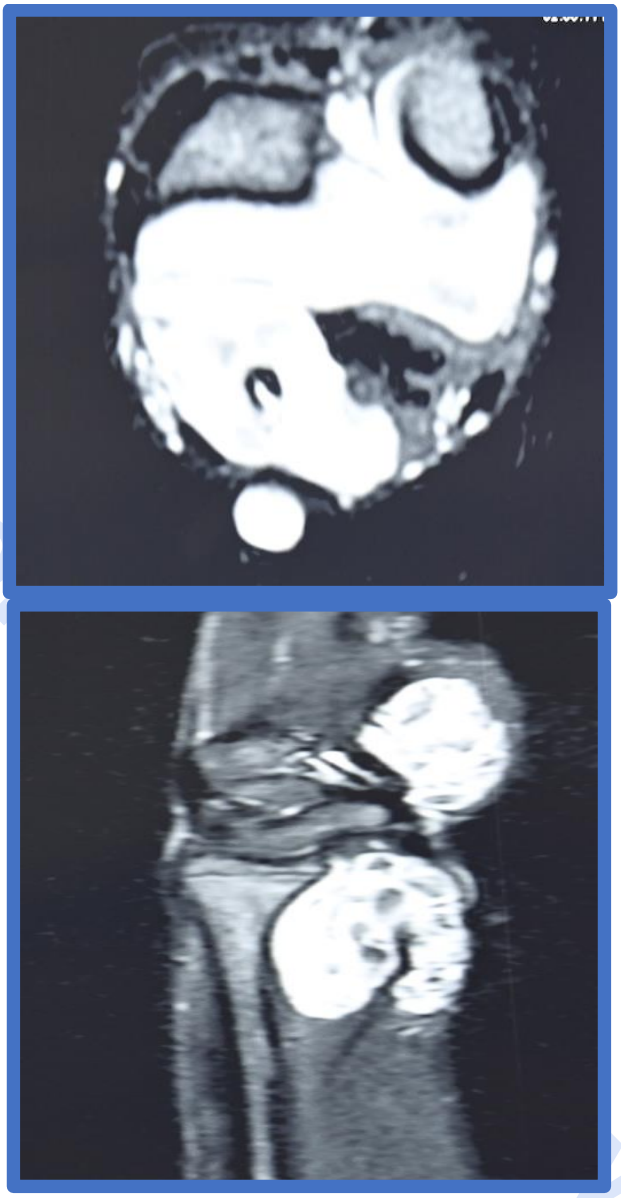

Fig. 1 - Radiological aspect. Profile.

The surgical procedure was carried out under local Axillary block ,After skin incision lazy S shaped ,on the palm of the hand along the cleavage lines extending upto the wrist , exposure of surface planes, and identification of hand structures, a careful dissection of the dark brown mass was performed, releasing tendons, nerves, and the ulnar artery was identified (Fig. 2). resection was completed with success. A negative suction drain was placed and the wound was closed with 3/0 mononylon. A

compression bandage was applied and the hand was kept raised. (Fig. 3). The patient had no complains of pain and oedema or colour change ,On the following day,. Passive physical therapy was started and patient was able to write his name . On 7th day after surgery, drain was pulled out and sutures were removed (fig4).

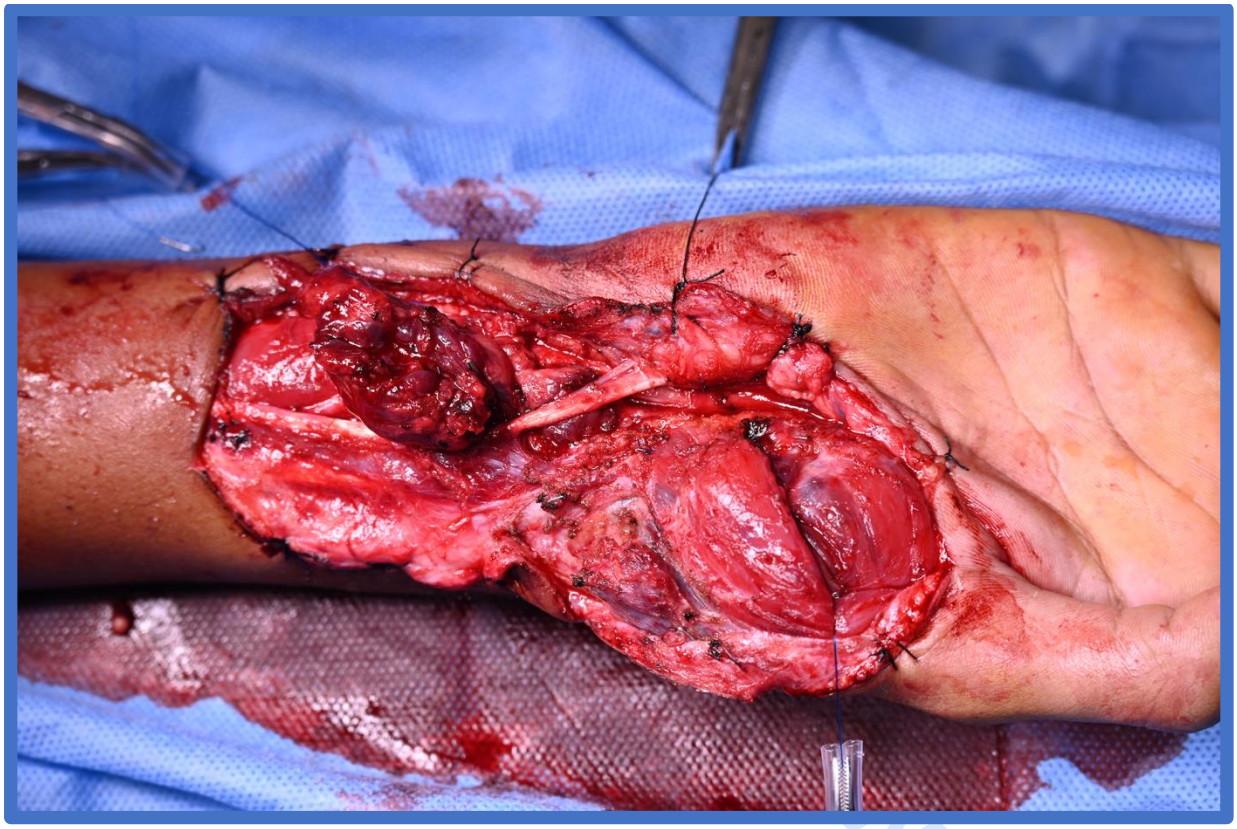

Fig. 2a - Intraoperative period.

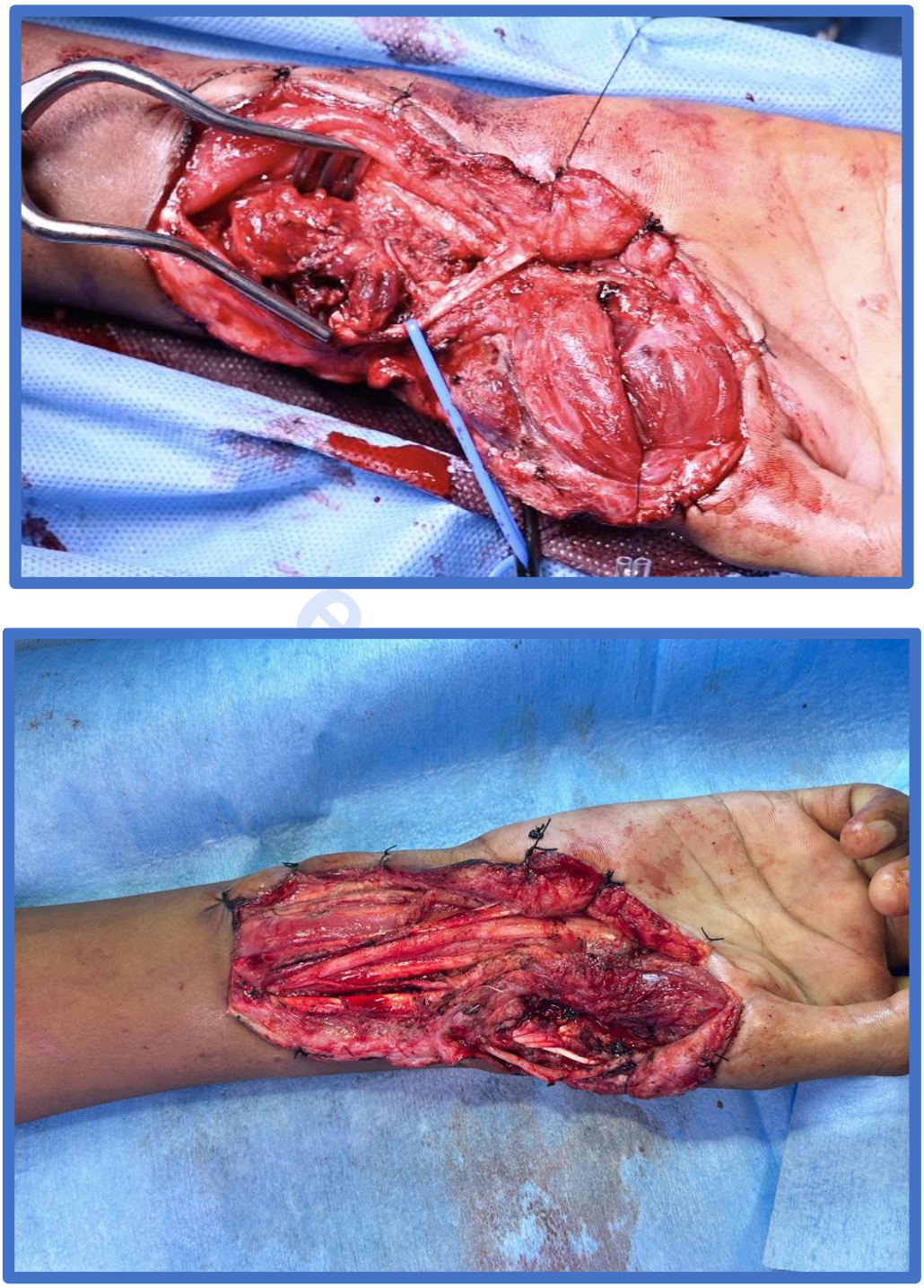

Fig. 2b - Tumor dissection.

Fig. 3 - One day after surgery.

8th days after surgery, the patient was discharged presenting with no limitation of any movement ,

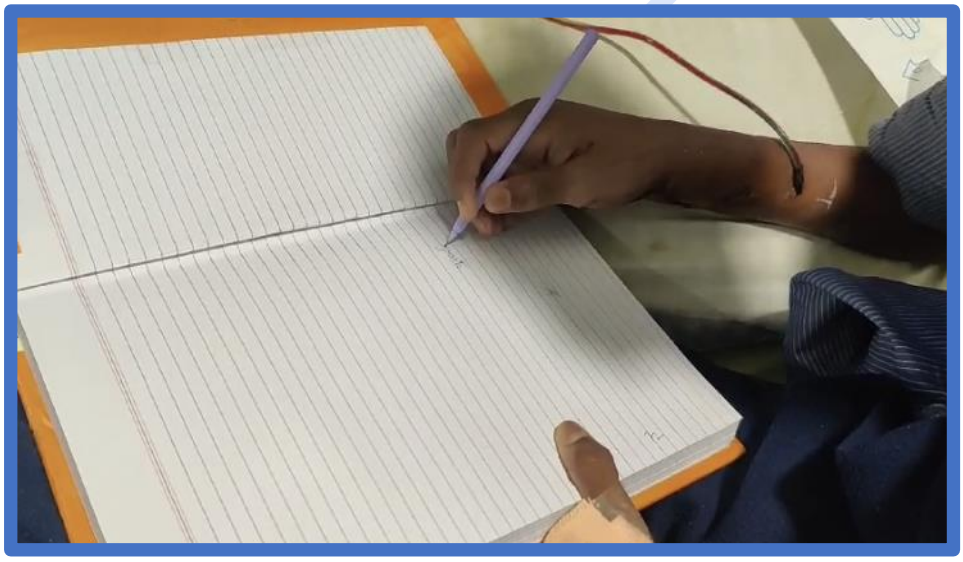

Fig. 4 – Demonstration of no limitation to fine movements.

8th days after surgery, the patient was discharged presenting with no limitation of any movement .

DISCUSSION

Hemangioma therapy is a hotly disputed issue, since a great percentage of the tumors spontaneously shrink or regress. The therapy is often delayed in the hope that the tumor disappears. In 1888, Duncan(8)was one of the pioneers to report spontaneous regression in more than half of the mixed-type hemangiomas.

Complications, such as ulcers, necrosis, secondary infection, and hemorrhage, can appear when the appropriate therapy is delayed. As for hand hemangiomas, tumor growth may lead to functional sequels, with limb amputation in the more severe cases. In several publications, Curado(9) has reported a 100% spontaneous involution of fragiform-type hemangiomas(4), which is seen in a few cases of cavernous hemangiomas.

In 1959, Weisman(6) determined that the hemangioma involution is not related to the tumor site and size and is independent of whether it is present at birth or not.

Several treatments have been suggested, including cryotherapy, intralesional injection of sclerosing agents and irradiation alone or in combination, with variable results. The use of sclerosing agents in the hand may produce fibrosis while irradiation and cryotherapy are not effective in treating this type of lesions due to their limited effects and because malign transformation is possible. In 1969, Glanz(5) reported that nonsurgical techniques play a small role, if any, in the treatment of cavernous hemangioma. The best results are obtained by surgical excision of the lesion, which is the first-choice therapy.

The cavernous hemangioma of the hand is generally larger than it looks like, once it tends to invade into deep tissue. Difficulties in the management of this type of diffuse vascular malformations have been extensively reported and their surgical resection requires a careful dissection. Serious complications are not uncommon, especially with preoperative embolization recommended

by some authors to decrease bleeding during excision. Surgery should be considered in individual cases, specially when the tumor is large or a functional limitation exists due to the high recurrence rate reported by some authors. Weisman and Milner(6) recommend the partial resection to alleviate symptoms, emphasizing the balance between aggressive surgical resection and prevention of functional structures.

In our case, a careful surgical resection was indicated due to the great palmar deformity and left hand functional limitation caused by the progressive tumor growth. The fact that anatomical structures are smaller in a child, and occupy a limited area is noteworthy. All measures required to preserve vital structures were taken with satisfactory esthetical and functional results.

Caroli and Zanasi(10)(1991), among others, reported that surgical treatment is the procedure of choice in cases of large hemangiomas of the hand , emphasizing the importance of a careful dissection and preservation of vital structures, with a low relapse rate.

Daily postoperative follow-up is important to early identify and treat complications, as illustrated by the present case. Three days after surgery, skin suffering secondary to a hematoma was noticed and satisfactorily resolved with surgical draining of the hematoma.

Our conclusion is that surgical treatment is possible and should be carried out in cases of large palmar hemangiomas in children. Despite the surgical challenge, good results can be expected.

Surgeons should avoid reintervention to avoid tissue necrosis, except when there is a strong indication. We believe that surgical treatment is the first-choice therapy in cases of tumors producing marked symptoms and functional limitation because the rapid tumor growth can results in permanent sequels and, in most severe cases, amputation.

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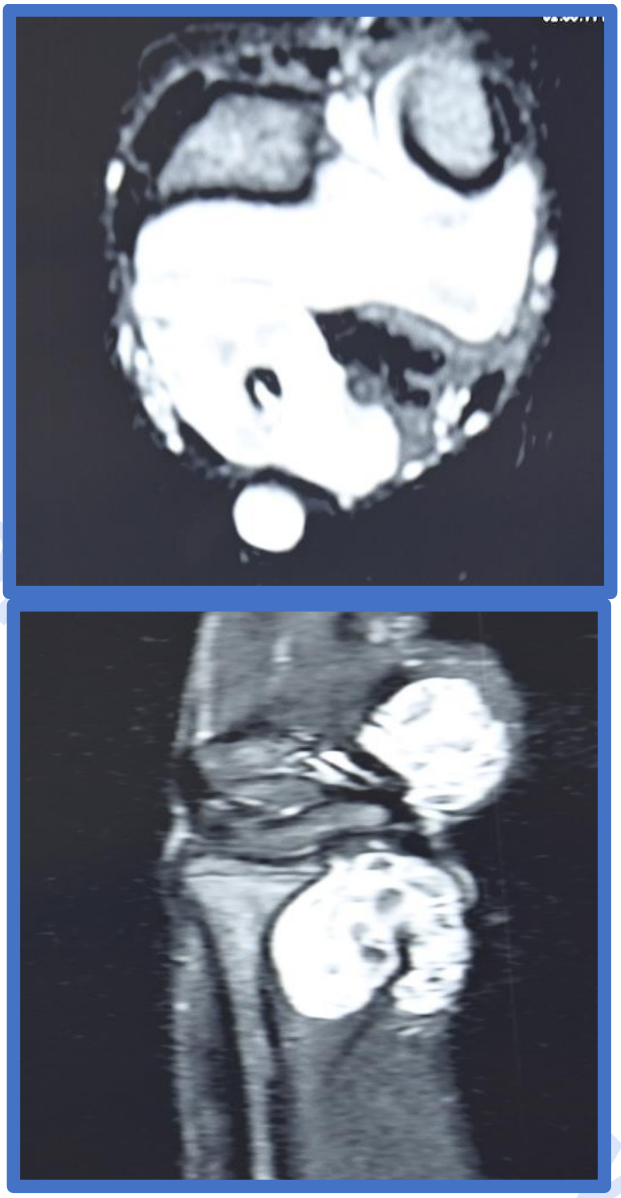

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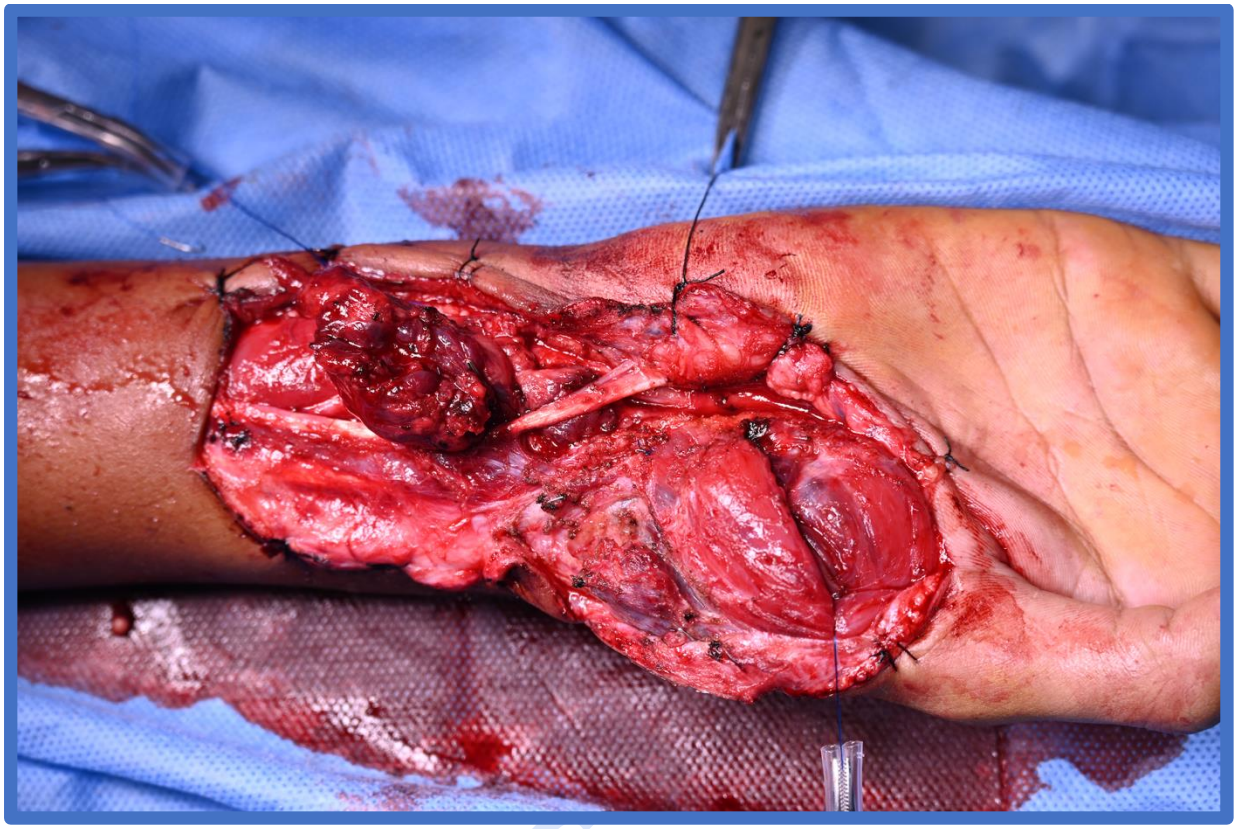

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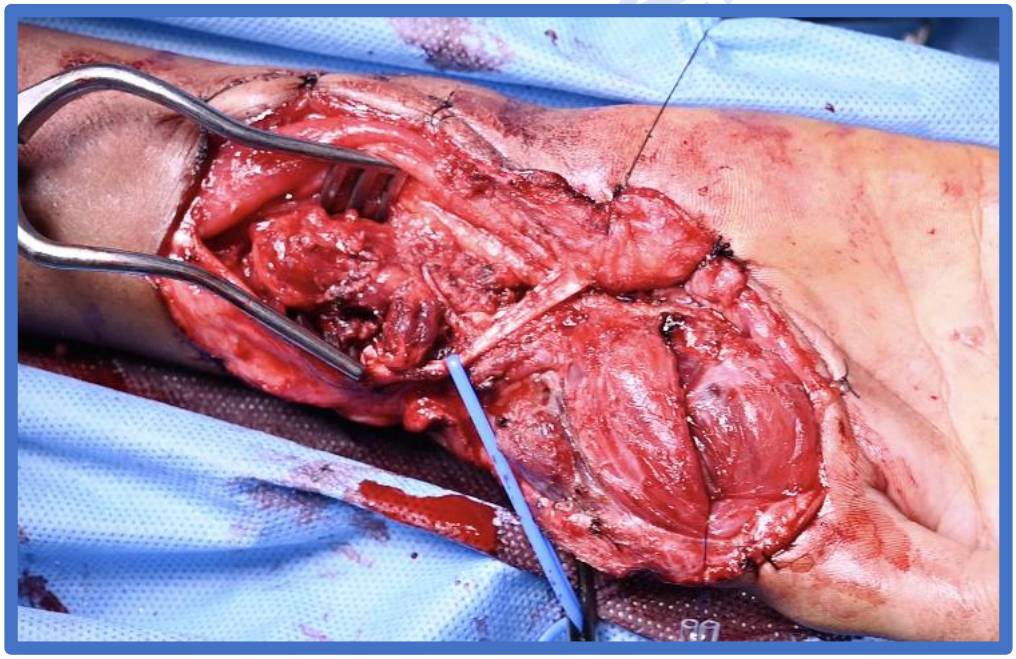

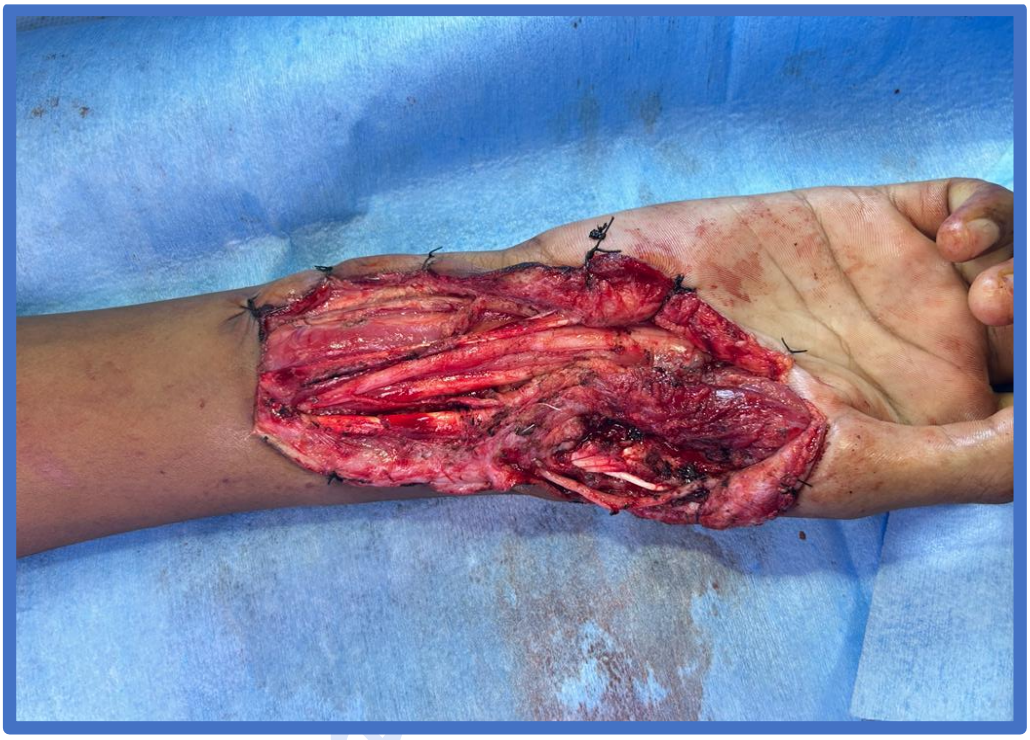

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Fig. 3 - One day after surgery.

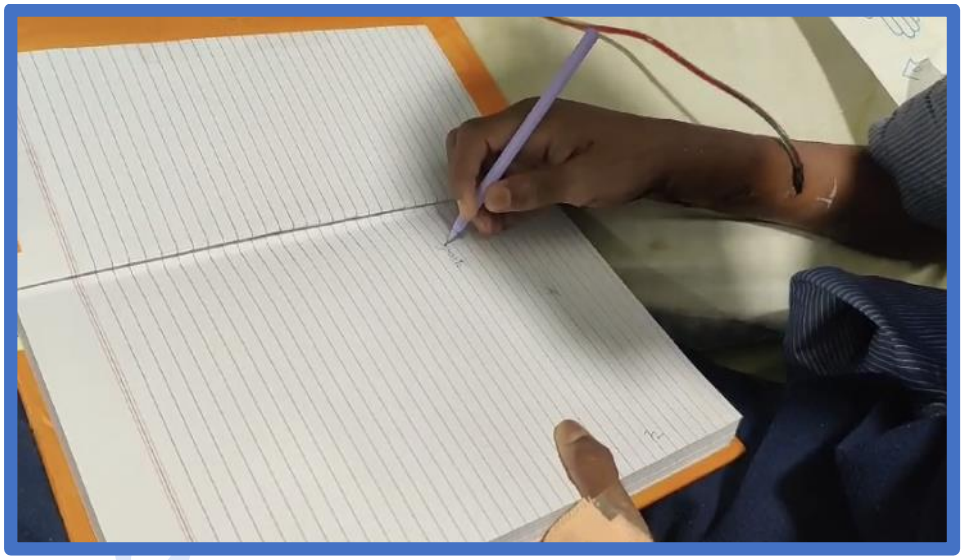

Fig. 4 – Demonstration of no limitation to fine movements.

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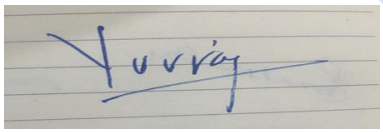
I have seen and read the material to be submitted to the JCTM

Signed: 

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