

Parasitic Infestation - An Uncommon Cause of Volkmann's Contracture of Forearm

Rahul Bhan*

Senior Consultant Orthopaedics, SPS Hospitals, Ludhiana, India

*Corresponding author: drbhan@hotmail.com

Abstract: Cysticercosis is commonly associated with infestation of the nervous system. Rarely other organs or systems are affected. Involvement of the muscles of the forearm leading to a Volkmann's type contracture has been reported only once before. We present a case report of cysticercosis of the deep flexor muscles of the forearm manifesting as flexion deformities of the ulnar three digits, mimicking a VIC.

Keywords: Parasitic infestation.

1. History of the Patient/Materials and Methods

A 17-year-old healthy male presented with spontaneous onset of contracture of the right middle, ring and little fingers of two months duration. The condition had started as a mild pain in the forearm and gradually progressed to the present state. There was no history of trauma and there were no obvious bony lesions or deformities. On examination the patient was found to have a typical Volkmann's contracture of the affected fingers. The Volkmann's test was positive. There was no neurological involvement.

The radiographs of the affected extremity were inconclusive showing an ill-defined soft tissue shadow. Magnetic resonance imaging of the forearm revealed a cystic lesion in the deep flexor group of muscles. The radiologist reported on the fairly well-defined cystic lesion with size 12x10x10 mm. with an eccentrically placed intramural nodule. There was suggestion of epifocal edema extending into the surrounding muscle fibers. The radiologist suggested the possibility of a parasitic disease.

Enquiry into the lifestyle of the patient revealed that the patient was a pork eating non-vegetarian. Laboratory investigations showed eosinophilia at 16%. ESR was recorded at 37mm. in the first hour. Other investigations were within normal limits.

The patient was operated upon under general anesthesia and tourniquet control. The lesion was found to be situated in the belly of flexor digitorum profundus. The lesion was excised en masse along with a cuff of normal muscle. Inadvertent puncture of the mass produced mucopurulent material with granular sediments. The defect in the muscle was sutured to the remaining part which was in continuity. The specimen was dispatched for histopathology. Post-operatively a POP slab was maintained for 8 weeks. Active physiotherapy to regain range of motion was started subsequently. The patient regained full

excursion of the affected digits.

Histopathology of the specimen was suggestive of cysticercosis with evidence of fibrosis with a cavitating lesion in the muscular tissue. The surrounding cellularity was predominantly eosinophilic and histiocytic. There were few myogenic giant cells.

2. Discussion

Cysticercosis is the manifestation of larval disease of *Taenia soleum* in humans. Literature is replete with instances of involvement of nervous tissue with this larva. Whereas, muscle tissue itself is not a rare site for the lodgment for the larva; the involvement of flexor digitorum profundus producing a Volkmann's contracture type picture is indeed rare. When numerous cysts are present the clinical picture maybe that of a lump simulating a tumor or pseudohypertrophy.

In the case presented the patient had contracture involving the middle, ring and little fingers of resembling the mild type of Volkmann's ischemic contracture. Contrary to Volkmann's ischemic contracture there was no preceding history of trauma to the limb.

The lesion which was identified on the MRI scan was subsequently excised along with the surrounding fibrotic tissue. Histopathology revealed intense fibrosis with predominant eosinophils and macrophages along with myogenic cells suggestive of parasitic infestation although the scolex was not evident in the sections seen.

Review of literature revealed only one reported case of cysticercosis presenting as a flexion deformity of fingers. Therefore, this cause though extremely rare, should always be considered when coming across patients of Volkmann's ischemic contracture especially with a history of exposure and no other obvious cause of the deformity.

3. Discussion and Conclusion

Cysticercosis is the manifestation of the larval stage of the disease caused by *Taenia soleum* in humans. The literature is replete with instances of involvement of nervous tissue with this larva. Whereas muscle tissue in itself is not a rare site for the lodgment of the larva; the involvement of flexor digitorum profundus producing a Volkmann's contracture is indeed rare. When numerous cysts are present, the manifestation maybe that

of a nodule simulating a tumor or pseudohypertrophy.

In the case presented, the patient had contractures involving the middle, ring and little fingers; resembling mild type of Volkmann's contracture. Contrary to VIC, there was no history of trauma or any other condition which causes ischemia to muscles.

The lesion, which was identified on MRI, was excised. Histopathology revealed intense fibrosis with predominant eosinophils and tissue macrophages along with myogenic cells suggestive of parasitic infestation of the affected muscles.

Scanning of literature revealed only 1 reported case of cysticercosis presenting as a flexion deformity of the fingers. Therefore, this cause, though extremely rare, should be

considered when coming across patients of Volkmann's type of contracture especially when no causative history is coming forth.

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