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**INTERNATIONAL JOURNAL OF  
 ADVANCED RESEARCH (IJAR)**

Article DOI: 10.21474/IJAR01/6108  
 DOI URL: <http://dx.doi.org/10.21474/IJAR01/6108>



## RESEARCH ARTICLE

### GLOMUS TUMOR OF THE HAND.

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#### Manuscript Info

##### Manuscript History

Received: 19 October 2017  
 Final Accepted: 20 November 2017  
 Published: December 2017

##### Keywords:-

Glomus tumor - Diagnosis - Surgery - Evolution.

#### Abstract

The glomus tumor or glomangioma are rare benign tumours developed with depends on the glomus neuromyoarteriel. They sit with predilection at the distal extremities of the fingers and especially on the nail bed. Our work is a retrospective study of 12 cases of glomus tumor of the hand, collected in Departement of Orthopaedic and Traumatology Surgery of Avicenne military hospital in Marrakech, Morocco, on a seven years period between January 2010 and December 2016. The goal of our work is to bring up the diagnostic problems of these tumors, to show the contribution of the modern imagery in the diagnosis, to underline the importance of the surgery and finally to evaluate our results and to compare them with the data of the recent literature.

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#### Introduction:-

Glomus tumor are rare benign tumors developed at the expense of the neuromyoarterial glomus. They sit with predilection at the distal extremities of the fingers and especially on the nail bed. Our present work aims to raise the diagnostic problems of these tumors, still little known, to show the contribution of modern imagery in the diagnosis, to underline the importance of the surgery and finally to evaluate our results and compare them with data from recent literature.

#### Material and Methods:-

Our work is a retrospective study of twelve cases of glomus tumor of the hand collected at the Traumatology-Orthopedics Department of the Avicenne Military Hospital in Marrakech, Morocco, over a period of seven years, between January 2010 and December 2016. The study methods were based on the use of medical records with the collection of detailed data on clinical examination, radiological, surgical and anatomopathological data obtained in these patients.

#### Results:-

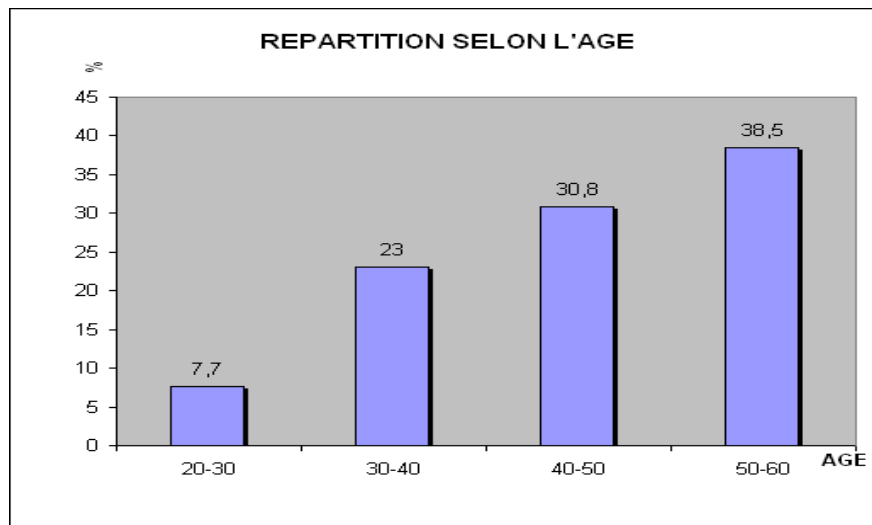
The average age of our patients was 42 years with a peak frequency between 50 and 60 years (Fig.1). There was a clear predominance of women, 80% (Fig.2). Pain is the main reason for consultation, evolving in a paroxysmal fashion, its dazzling and atrocious contrast with the discretion or absence of local signs. There were 7 cases of subungual localization, 3 cases of pulpal location and 2 cases of latero-pulpal location (Figs 3 and 4).

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Complementary examinations were based on the X-Ray, which showed a bone in 1 patient, on the ultrasound, made in 1 patient who showed hypoechoic mass, and on the MRI performed in 5 patients. made it possible to locate the tumor and to specify its volume.

The treatment was surgical in all cases with complete resection of the tumor (Fig.5). The pathological study, performed in all cases, confirmed the diagnosis. There were 2 cases of recidivism, which were favorably resumed. The results were satisfactory in all the cases with spectacular disappearance of the pain, no case of nail dystrophy was noted, the cicatrization with functional recovery was obtained in 3 weeks in case of peri-ugueal approach and 5 weeks for first trans-ungual.



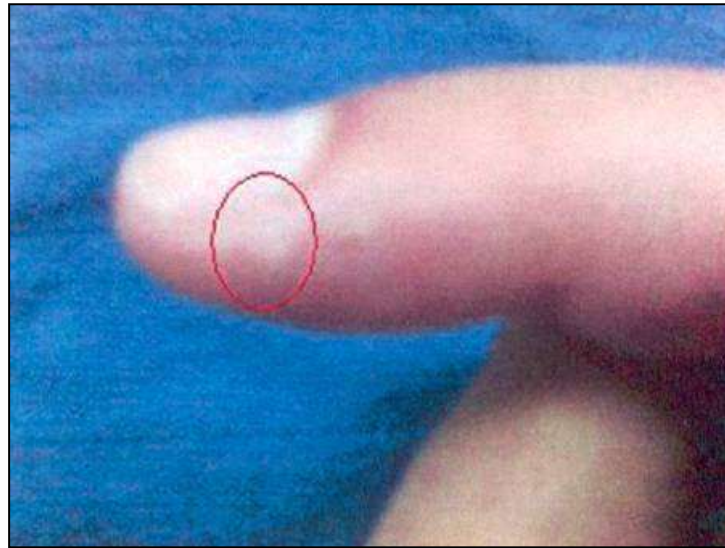
**Fig.1:-** Distribution of patients by age.



**Fig.2 :-**

patients by gender.

Distribution of



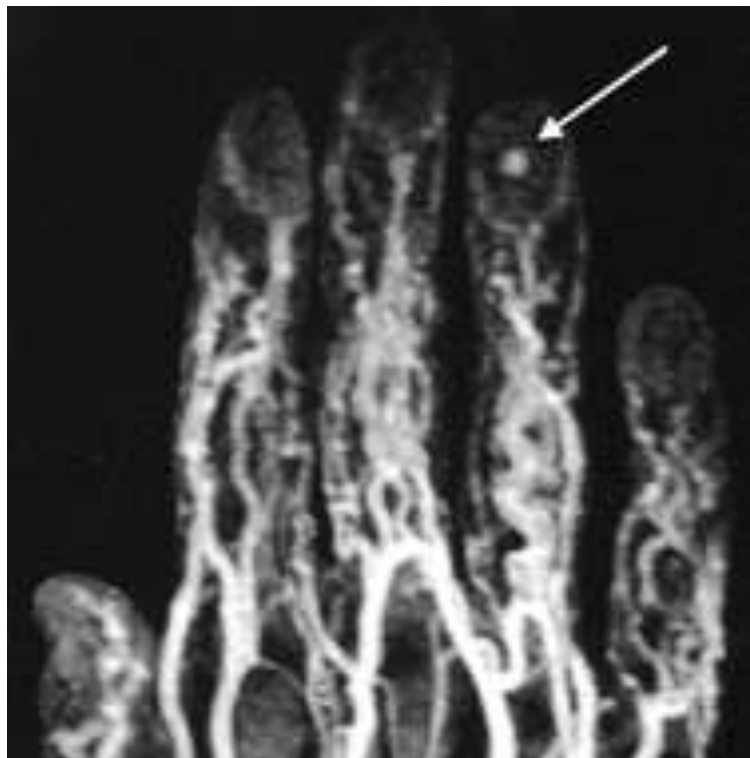
**Fig.3:-** Lateropulpal glomial tumor in the form of a whitish zone.



**Fig.4:-** Intraoperative view of resection of a lateral-to-posterior glomiform tumors by direct way.



**Fig.5:-** Macroscopic appearance of the same glomic tumor.



**Fig.6:-** Rounded formation of the soft parts of the posterior region of the distal phalanx of the 4th finger, enhancing after gadolinium injection: aspect in favor TG. (case 7)

### **Discussion:-**

The glomus tumor is a benign tumor, rare but not exceptional (1), it represents 1.6 - 5% of tumors of the soft parts of the hand (2). Females are more likely to have them especially in the digital location in subungual (3), in our series there appears a clear female predominance, these data join the results of the other series. The latter show that the age or diagnosis is posed very regularly around 20 to 65 years, our results are similar to those of the literature since the average age is 42 years. The glomus tumor is developed at the expense of the neuromyarterial glomus Masson which

is located mainly at the extremities especially at the level of the fingers, which explains the frequency of glomus tumors of the hand.

Localization predominates in the nail bed very rich in glomus. Pain is the earliest symptom, the most characteristic in the glomus tumor evolving paroxysmally. Its dazzling and atrocious character contrasts with the discretion or absence of local signs (3). The differential diagnosis is vast but the clinic simplifies the problem.

When the triad: algie, trigger zone, hypersensitivity to cold is found, there is no longer any diagnostic doubt. Complementary examinations are based on: X-Ray, which is the only examination systematically performed by all authors in the context of a painful lesion of the extremities.

It is important in case of clinical suspicion to search for these signs with relentlessness, Fornage (4) suggests besides to do this radiography with a low-voltage device like mammography. In our series, standard radiography was performed in all patients; it showed erosion of the 3rd phalanx in one case (observation 1).

Ultrasound makes it possible to visualize glomic tumors of very small size without physical signs or apparent radiological manifestations. This method has been used by Fornage since 1988 (4). While ultrasound has the advantage of being safe, non-invasive and less expensive, its specificity varies from 51% to 77% (4). This examination was performed in 2 patients of our series, it was a well-defined round image, hypoechoic, in the first case, and it returned negative in the second case.

MRI is the most effective way to make the diagnosis and especially to locate the tumor especially if it is guided by the ultrasound. Classical MRI is nonspecific, and gives false negatives for tumors smaller than 3 mm. We have improved the MRI, performed in high resolution, this allowed to improve the false negatives, the lesions show a hyposignal in T1 and a hypersignal in T2 (5) with clear contrast between what is normal tissue and what is tumor (6). Apart from the diagnostic aspect, MRI is a method of choice for surgical tactics: the precise information provided on the size and location of the tumor has made it possible to limit and guide the approach. In our series, MRI was performed in 8 patients (Fig.6), which made it possible to locate the tumor well and to specify its volume.

The positive diagnosis of certainty can only be made by histology. The treatment is exclusively surgical, it allows to confirm a diagnosis often uncertain by a histological examination of the tumor and to remove the pain.

For subcutaneous or pulpal tumors, the approach is direct, respecting the principle of cutaneous incisions, avoiding the path of nerve twigs (7). When the tumor is under a nail, the problem is to prevent the occurrence of post-surgical nail dystrophy (8), the peri-ungual approach allows a double access pulp and under a nail and respects relatively the ungual apparatus, it is however deep and rather difficult in the central locations, thus making the bed with recurrences (7). The trans-ungual approach was widely used (3), but because of the major nail dystrophies it caused, it declined in the periungual approach. It is no longer appropriate to perform total resection without optical magnification, since the size of the tumor is often small and rarely exceeds 10 mm more than the approach of the nail bed and the matrix often requires a microsurgery (7). After complete tumor removal, the results are generally considered excellent. In the majority of cases, the disappearance of the pain is fast and the finger or the member concerned resumes its normal appearance in 3 months (6).

Complications are dominated by recurrences, which are not uncommon; according to recent studies, 4 to 24% of patients require a new intervention (3), so most authors believe that recurrence is due to insufficient excision. Ungual dystrophies are related to the lesion of the germinal matrix or the non-restoration of the nail bed, they can also be related to the adhesion of the eponychium with the matrix by the non-restitution of the nail and the irregularity of the nail. surface of the nail bed after surgery (8).

### **Conclusion:-**

The glomus tumor appears as a confusing pathology, first of all because of its rarity, then of its particular clinical expression. Although the clinic is rather univocal by the classic association of intense pain with hypersensitivity to cold, the examination is not very helpful because the objective signs are inconsistent. The diagnosis has largely benefited from the contribution of modern imaging, including MRI which allows to give more details on the volume and the tumor site. The diagnosis of certainty can only be made by histology. The treatment is exclusively surgical,

it must be performed in a specialized environment, using microsurgical techniques. Recurrences are rare and the results are generally excellent.

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