A Clinicopathological Pattern Of Tumoral Calcinosis In Maiduguri, North Eastern Nigeria

B Gali, H Nggada, D Mshelia

Abstract

Background: Tumoral calcinosis is a rare disease reported mainly among blacks of African descent with paucity literature in Africa.

Aims and Objective: This study aims at reviewing the clinicopathological pattern of Tumoral calcinosis in Maiduguri Northeastern Nigeria.

Methods: All histologically diagnosed cases of Tumoral calcinosis were retrieved and reviewed at the University of Maiduguri Teaching Hospital between January 1994 and December 2003.

Results: There were twelve diagnosed cases of Tumoral calcinosis. All age groups were affected except the pediatrics age group. The age ranges between 15 and 70 years with a mean age of 38.5 years. There was no sex predilection. Multiple sites occurred in three patients with two recurrences. The commonest site is the hip joint and one unusual site, which is the scrotum. Surgical excision was performed on all patients with recurrences.

Conclusions: Tumoral calcinosis is a rare benign lesion and most of the lesions are asymptomatic. However, morbidity may be related to the size, location and secondary infection. Early and adequate wide surgical excision is essential to avoid the morbidity and recurrence.

INTRODUCTION

Tumoral calcinosis was first described in 1899. Although the lesion is relatively uncommon, it is mainly reported among blacks, especially from the tropical and sub-tropical regions of Africa. There were few isolated reports from Africans that includes; the Ibo's of Eastern Nigeria, Somalis and Ethiopian's, and Kenyans. There were few cases reported in the Arabian Peninsula; among the Saudis and Yemenis.

The etiology remains unknown, and may be misdiagnosed for other common causes of subcutaneous calcified nodules. There were few literature on the clinicopathological study of tumoral calcinosis and therefore this study aimed at reviewing the clinicopathological pattern of tumoral calcinosis.

MATERIAL AND METHODS

This is a retrospective study of 12 cases of Tumoral calcinosis diagnosed at the University of Maiduguri Teaching Hospital between January 1994 and December 2003 inclusive. The patient's case notes were retrieved from the medical records department and the histological request forms from the histopathology departments. Two of the patients had FNAC and the diagnosis was confirmed by histology. The following information includes about age, sex, anatomical sites and treatment were extracted and analysed using simple statistical tables.

RESULTS

There were 12 cases of Tumoral calcinosis diagnosed between 1994 and 2003. All age groups were affected except the pediatrics age group (less than 15 years). The peak age group is between 15 and 19 years while the ages ranges between 15 and 70 years with a mean age of 38.5 years (Table I). There was no sex predilection; male to female ratio is 1:1. Multiple lesions occurred in three patients with one having extensive lesion involving three different sites.
Table 2 shows the anatomical site and the commonest sites involved was the region the hip joint (5), followed by the knee, elbow and scapula with 2 cases each, and one case of the scrotum. The patient with multiple lesions has no family history. The serum calcium and phosphorus level were all within normal ranges. X-rays showed soft tissue calcifications with no skeletal changes.

**Figure 1**
Table 1: Age and sex distribution of Tumoral calcinosis

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-19</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>24.9</td>
</tr>
<tr>
<td>20-29</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>30-39</td>
<td>2</td>
<td></td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>40-49</td>
<td></td>
<td>1</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>50-59</td>
<td></td>
<td>1</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>60-69</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>70 &amp; &gt;</td>
<td>1</td>
<td></td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>100.0</td>
</tr>
</tbody>
</table>

M:F = 1:1

**Figure 2**
Table 2: Anatomical sites.

<table>
<thead>
<tr>
<th>Sites</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Around hip joint</td>
<td>5</td>
</tr>
<tr>
<td>Elbow</td>
<td>2</td>
</tr>
<tr>
<td>Scapula (shoulder)</td>
<td>2</td>
</tr>
<tr>
<td>Knee</td>
<td>2</td>
</tr>
<tr>
<td>Scrotum</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Tumoral calcinosis is one of the variants of idiopathic calcinosis cutis, others includes calcinosis cutis circumscripta and calcinosis cutis universalis. All are groups of disorders in which calcium deposits form in the skin and subcutaneous tissues. Tumoral calcinosis is a rare disease mainly reported among people of African descent with 6 cases reported among the Ibo's of Eastern Nigeria, 10 and 11 cases amongst Ethiopians and Somalis, respectively and one Kenyan. The rarity may be attributed to the indolent and asymptomatic nature of the lesion in the early onset except when it affect the joints to cause morbidity. Majority of our patients with the lesions never present to the hospital and only very few were subjected to histopathologic diagnosis. Two of the patients presented with recurrence after 9 and 6 years of excision and one did not have histopathological diagnosis this is because of the poor histopathological services and personnel in most of the hospitals in our environment.

The etiology of Tumoral calcinosis is unknown because there were no established metabolic or genetic disorders, even though few familial diseases has been reported that suggest autosomal recessive gene pattern of inheritance. A girl with cutaneous manifestations of Tumoral calcinosis has been reported among seven members of a large family. In our series however, there was no family history or trauma to suggest or implicate an etiological factor. Tumoral calcinosis affects both sexes with more females reported among the Ibo’s of Nigeria, and the 11 cases documented among Somalis all females by Jain. All ages were affected but usually peaked by the second decade of life and this is similar to other study. Majority of our cases present with discrete, solitary, hard subcutaneous lesions and one of the three patients presented with multiple lesions involving the shoulder, elbow and hip joint which may mimic malignancy clinically (fig. 1).

**Figure 3**
Figure 1: Showing a 20 year old man with Tumoral calcinosis involving the Rt. Shoulder, Lt. Elbow and Lt. Hip.
scrotum.

Like most patients with tumoral calcinosis, the patients with multiple lesions have normal serum calcium and phosphorous levels. Two patients had X-rays, which revealed subcutaneous calcifications with no bony changes (fig 2).

**Figure 4**
Figure 2: X-ray of Tumoral calcinosis of the Lt. Elbow

The diagnosis of Tumoral calcinosis can be made on Fine needle aspiration cytology (FNAC) of a skin nodule as documented by Zaharopoulos. Two of our patients had FNAC where a chalk-white paste like material was aspirated, followed by a tissue biopsy and histological examination that confirmed the diagnosis of Tumoral calcinosis (fig. 3).

**Figure 5**
Figure 3: Photomicrograph showing islands of tumoral calcinosis within a fibrous tissue. H&E X144.

The treatment of choice is surgical excision. Others include medical, dietary and topical therapeutic application of steroids has been tried with variable benefit. A wide surgical excision was offered to all our patients with recurrences. The indications of most patients were due to cosmetics reasons and others include ulcerations and infection especially in two of our patients who had inadequate excision by traditional healers.

In conclusion Tumoral calcinosis is a rare, benign lesion with an indolent course. However, recurrence and multiple site involvement may mimic malignancy and morbidity may be related to the size, location and secondary infection. Early and adequate wide surgical excision is essential to avoid recurrence and morbidity.

**ACKNOWLEDGMENT**
We wish to acknowledge the useful contributions of Professor M.I. A Khalil and Dr U. H. Pindiga of Histopathology Department and the surgeons of the University of Maiduguri Teaching Hospital.

**References**
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