

Early Diagnosis and Management of Charcot Foot in Libya

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Abstract: The present study was aimed to reduce the incidence of foot deformity and poor deformity complication which lead to amputations. This research was conducted on 50 patients presented to OPD. 20 patients referred early as case group A (incipient Charcot foot), and 30 patients were referred delayed as case group B (overt Charcot foot). In this study, we used checklist of factors to consider a diagnosis of charcot foot and we compare this list of factors between case group A and case group B. In this study, 60% of patients with clinical picture of foot Pain, loss of sensation, and Swelling. 15% from our patients have swelling, hotness in one foot. 25% of patients have mild changes in foot shape. Early diagnosis of charcot foot is very important to start an early treatment to get successful treatment. Patients of Diabetes should keep the levels of blood sugar under control. Follow the surgeon's instructions for long-term treatment to prevent recurrences, ulcers and amputation. Correct the bad education about neuropathy and osteopathy.

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1.Introduction

From 100 years ago until now, charcot foot is a major cause of morbidity for patients with diabetes mellitus and is challenge for physicians (1). Although the many researches are found initial radiograph may be normal, and the diagnosis was difficult, but they said early recognition and diagnosis and a lifelong program of preventive care can minimize the morbidity of charcot foot (2). Most researches have been divided the charcot foot into five stages, and they put clinical signs under first stage (Swollen, warm, often painful foot). Also they put clinical signs with demonstrates periarticular cysts, erosions, localized osteopenia, and sometimes diastases under second stage. under third stage, they put joint subluxation which usually starting between the second cuneiform and the base of the second metatarsal which occur laterally. In the fourth stage, joint dislocation and arch collapse are occur. Under fifth stage, they put the healed and stable end result of the process (3, 4). In the last, all researches have been found the definition of charcot foot is a syndrome in patients who have neuropathy and includes fractures and dislocation of bones and joints which occur with minimal or unknown trauma (5, 6, 7).

2. Patients and Methods

The search was conducted on 50 case, 40-70 years old. This study was conducted in (Aboslim trauma hospital) and (Diabetes and endocrine glands

hospital), last two years. The cases were divided into 2 groups (A and B), 20 patients in group A (case group A), 30 patients in group B (Case group B). In case group A, the patients were referred early (incipient Charcot foot), and in Case group B, the patients were referred delayed (overt Charcot foot). 50% from group A and group B were males and 50% were females. Our data, including age, sex, nationality, height and weight were recorded. In present study we used checklist of factors to consider a diagnosis of charcot foot and we compare this list of factors between case group A and case group B. We used in checklist 1- Cases history which includes: (A-pain. B- Types of diabetic disease. C-Kind of trauma). 2- Clinical signs which include: (A-Redness. B-Hotness. C- swelling. D-deformity. E-ulceration. F-Pathological fracture). 3-investigation which include w: A-X-ray. B- Skeletal centigram using T99. 4- Management which include: (A- Casting. B-Antibiotics. C-Calcium. D-Shoe work. E-Pedography).

3.Result

A total of 50 cases were evaluated in two groups. In case group A and B, there were (100%) Libyan nationality. The youngest patient was 40 years old and oldest was 70yr. In this research, we compare checklist of factors between case group A and case group B which presented in tables (1, 2, 3 and 4). Tables (1, 2,3and 4) shows that different between

early stage and late stage was occurred. Pain is present in early cases (in case group A) but pain is usually absent in late cases (case group B) because sensory neuropathy, which is universal and is probably a component of the basic pathogenesis of the Charcot foot. Although described in patients with many

diseases as tertiary syphilis, but the Charcot foot in this research and in this years is seen mostly in patients with diabetes mellitus in case group A and B. In this research, most of case group A (early patients) have trauma, but in case group B (late patients) mostly they didn't know about the trauma. Table (1).

Table 1: Comparative between case group A and case group B during (case history) of patients:

Case history	Case group A	Case group B
Pain	Present	Absent
Types of diabetic diseases	diabetes mellitus	diabetes mellitus
Kind of trauma	Present	Unknown

In clinical signs, in case group A the redness and hotness are present, and in case group B, hotness is present but redness present in 50% of patients. The swelling in group A is mild and in group B is present. About deformity and ulceration were absent in case group A, but in case group B were present (deformity

present, ulceration 30% present). We didn't find infection in case group A, but in case group B, there is secondary infection 10%. In our research, pathological fracture is 5% in group A, and 20% in group B. Table (2) (Table 2, Figure 1).



Figure 1. Pathological fracture

Table 2: Comparative between case group A and case group B during (clinical signs) of patients:

Clinical signs	Case group A	Case group B
Redness.	Present	5% present
Hotness.	Present	Present
Swelling	Mild	Present
Deformity	Absent	Present
Ulceration	Absent	30% present
Pathological fracture	5% of cases	20% of cases
Infection	Absent	10% with ulceration.

When we use X-ray as investigation, we have been observed no bone changed in group A, but often we are seeing osteoarthropathy with fracture dislocation in group B. but when we use Skeletal

centigram using T99 as investigation, we have been observed in both group A and B increase uptake. Table (3) (Table 3, Figure 2).

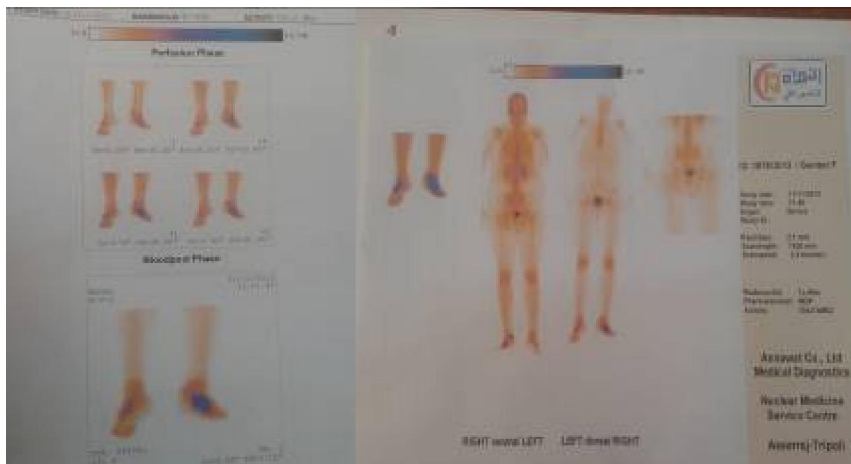


Figure 2. X-ray as investigation

Table 3: Comparative between case group A and case group B during (investigation) of patients:

Investigation	Case group A	Case group B
X-ray	No bone changes	osteoarthropathy with fracture
Skeletal centigram using T99	Increase uptake	Increase uptake in active stage

In management, we used casting in both group A and B, also we used antibiotics in two groups A and B. But we used calcium in group A only. In our patient we

used shoe work after 3-6 month in group A, but in group B we used it in deformed foot. In our study we used pedography in late stage only (group B). Table (4).

Table 4: Comparative between case group A and case group B during (Management) of patients:

Management	Case group A	Case group B
Casting	Used	Used
Antibiotics	Used	Used
Calcium	Used	Not used
Shoe work	After 3-6 months	In deformed foot
Pedography	Non	Needed for shoe work
Off loading	Used	Used

4. Discussion

Most foot problems in diabetic people arise from two serious complications of the disease: nerve damage and poor circulation. One of the most foot problems with these complications can cause is Charcot foot, or as some studies referred to Charcot neuropathic osteoarthropathy (CN), which is a case affecting the bones, joints, and soft tissues of the foot, characterized by inflammation in the earliest phase (8). Early diagnosis of Charcot foot is so important for good treatment (9). To make good diagnosis, the surgeon should examine the foot and ankle and ask about events that may have occurred prior to the symptoms. X-rays and other tests may be ordered when treatment begins. X-rays should be taken periodically to help in evaluating the status of the condition. Failure to follow the surgeon's treatment plan for Charcot foot can lead to the loss of a toe, foot, leg, or life (10). A patient with Charcot in one foot is more likely to develop it in the other foot, so measures must be taken to protect both feet. Using shoes with special inserts may be needed after the bones have healed to enable the patient to return to daily activities—as well as help prevent recurrence of Charcot foot, development of ulcers, and possibly amputation (11). However, the most effective treatment is prevention. For people with diabetes, careful, daily inspection of the feet is essential to overall health and the prevention of damaging foot problems. The early diagnosis and treatment of charcot foot is better to the final outcome. Diabetic people must control their blood sugar levels and carefully inspect

both feet everyday. Both responsibilities are important in recognizing Charcot foot early, and in avoiding future complications. Patients should have diabetic education and follow up of patients in diabetic clinic with well trained medical staff as well as providing good shoe work for diabetic patients to reduce the number of amputation

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