

## The Surgical Management of Diabetic Foot

Dr. Kunal Solanki\*, Dr. Hiren Parmar<sup>^</sup>, Dr. Vikram Gohil\*, Dr Samir Shah\*\*

\*Assistant Professor, \*\* Professor and Head, Department of Surgery, Government Medical College, Bhavnagar, <sup>^</sup> Assistant Professor, Department of Surgery, Sardaben Hospital, Ahmedabad

**Abstract :** Diabetes has proved itself a silent killer disease. Today in the world maximum numbers of the patients are suffering from this disease, and moreover they are passing through the associations of the complications too. In present study 50 cases of diabetic foot surgically managed has been studied at teaching institute in department of surgery. The limb was preserved in 35 out of 50 cases. 15 out of 50 cases despite of proper medical management and repeated debridement had to undergo local amputation-B\K amputation-A/K amputation. This was done to save the patients. It is concluded that we should be able to save 100% limbs in diabetic foot and no amputations provided

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**Corresponding Author:** Dr. Krunal Solanki Assistant Professor, Department of Surgery, Government Medical College, Bhavnagar

**INTRODUCTION:** Diabetes has proved itself a silent killer disease. Today in the world maximum numbers of the patients are suffering from this disease, and moreover they are passing through the associations of the complications too. According to WHO diabetes is a chronic disease that occurs when the pancreas doesn't produce enough insulin or alternatively, when body cannot effectively use the insulin it produces. It has a heterogeneous clinical syndrome in which the central feature is a chronic elevation of the blood glucose concentration, which is associated with long term tissue damage especially the blood vessels, nerves, heart, kidneys and eyes.

Diabetic foot is defined as 'infection, ulceration and or destruction of deep tissues associated with neurological abnormalities and various degrees of peripheral vascular disease in the lower limb'. The term diabetic foot indicates that there are specific qualities about the feet of people with diabetes that sets this disease apart from other conditions that affect the lower extremity.

Evidence prove that the pathophysiological process of diabetes have put the foot at increased risk for tissue damage. Tissue damage has occurred and the foot is at risk for end stage complication.

50% of all lower extremity amputations (LEA) are diabetes related.>70% of LEA's are preceded by a foot ulcer.3-10% of those with diabetes have a foot ulcer.15% of all those with diabetes will, during their life time develop an ulcer<sup>1</sup>.

The international working group on the diabetic foot proposed the PEDIS classification: It grades the wound on the basis of 5 feautres<sup>1</sup>. i.e. perfusion , Extent (area) ,Depth, Infection and sensation.

The infectious diseases society of America published guidelines in 2004 that sub classify infected diabetic foot wounds into the categories<sup>2</sup>

- Mild (restricted involvement of only skin and subcutaneous tissues )
- Moderate (more extensive or affecting deeper tissues )
- Sever (accompanied by systemic signs of infection or metabolic instability )

**MATERIAL AND METHOD:** Present Study was conducted in 50 cases of diabetic foot at Department of Surgery in teaching institute after taking approval from IRB. Written consent from the patient was taken. Detail of patients was collected in Performa and investigated for Diabetes and was surgically managed.

**RESULTS and DISCUSSION:** The present study, 50 cases of diabetic foot surgically managed has been studied at teaching institute in department of surgery.

Diabetic foot lesions are commonly found in the middle aged person usually in to the 4<sup>th</sup> and 5<sup>th</sup> decade of their life. In present study 31 patients(62%) out of 50 were from middle age group.(4<sup>th</sup> and 5<sup>th</sup> decade of their life).In other study of 100 pts, 79 were from 4<sup>th</sup> and 5<sup>th</sup> decade of life<sup>3</sup>. the higher incidence of male diabetic foot lesions is mainly due to the unhygienic habits, trauma and smoking. In other study of 100 pts, 62 were male and 38 were female<sup>4</sup>.

In diabetes mellitus, trauma to the foot plays a critical roll in the evaluation of the disease process. Many a times, only a trivial trauma may change the fate of the foot. In the present study 27 patients (54%) received injuries to the foot as an initial event. One of the complications of DM is hypertension.

In the present study 19(38%) had associated hypertension. Both limbs are equally associated. In the present study 32 (64) % patients had history of smoking- a risk factor for the development of peripheral vascular disease. In one study, 80% pts had history of smoking<sup>5</sup>.

In this study, it is observed that 22 patients (44%) were previously known diabetics already under antidiabetic treatment, while in 28(56) %, DM was detected for the first time after hospitalization. Despite the fact that previously known diabetics made all sincere efforts to keep their blood sugar levels under control. They could not avoid the development of diabetic foot and 6 had to undergo amputation.

It is quite evident that in the majority of cases (56%), infection was the sole predominant feature while others had associated vasculopathy /neuropathy.

In one national study-2006, infection was the predominant feature while in all the pts. (100%)<sup>6</sup>. In the present study 13(26%) patient underwent

arterial Doppler and 7 had positive finding in the form of,

- No flow below right femoral artery in 2 pts.
- No flow below left femoral artery in 1 pt.
- No flow below Right popliteal artery in 1 pt.
- No flow below left popliteal artery in 3 pt.

In the present study 1(2%) patient underwent CT angiography of bilateral lower lib. The outcome was right Above Knee amputation

Modalities of treatments are used:

- Debridement : in 17 (34%),debridement with skin grafting solved the problem, while in 15(30%) patients debridement failed in achieving healing and amputations were selected as treatment modality. In one international study, group-a non surgically treated pts had healing rate 79.2% and group-b in which debridement was done had healing rate was 95.5%<sup>7</sup>.
- Amputations 7 patients required local amputations, while 4 patients required below knee amputation,4 patients require above knee amputation .in one study 27% pts required amputation<sup>5</sup>.

**CONCLUSION:** Surgical management of diabetic foot has changed drastically over a period of time. Now the aim is conservation. The awareness of surgical complication of diabetic foot has helped in reducing dreaded complications like gangrene in some of the patients. Diabetic foot is one of the most difficult infections to treat as it involves systemic diseases, lower resistance, ignorance in part of patients, and poor compliance of long term insulin therapy and fear of surgery in part of patients.

In the present study, 50 cases of diabetic foot were surgically treated. The limb was preserved in 35 out of 50 cases. 15 out of 50 cases despite of proper medical management and repeated debridement had to undergo local amputation-B\K amputation-A/K amputation. This was done to save the patients.

It is concluded that we should be able to save 100% limbs in diabetic foot and no amputations provided

- To educate all diabetic patients about likely foot infection.
- Once foot infection develops, to be treated immediately and radically by repeated debridement.
- To find out and implement newer antibiotics in combination to control the infection in diabetic foot at very early stage so that patient is cure.

Newer advances in the conservative surgical management of diabetic foot will also help to preserve the limb in coming years.

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