



Diabetic Foot Surgeries on Day Care Basis – A Case Series of 15 Patients In Rural Setup

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ABSTRACT

Objective – The prevalence of Diabetes Mellitus in the rural population is high, even in the rural population. The incidence is increasing with a proportional increase in the incidence of diabetic foot cases, especially in uncontrolled diabetes mellitus. We have attempted to manage selected cases of diabetic foot on day care basis in our institute to reduce the cost of the treatment, especially in our region where low socioeconomic status is prevalent.

Methodology – Our case series included 15 patients operated from Jan 2015 to June 2015 at our institute which were followed up over a period of 3 months. Patients of either sex were selected with age group between 45 to 60 years, with none of the patients having any diabetic complications.

Results – Out of 15, we completed 14 cases (93%) successfully on day care basis which we consider to be considerably high.

Conclusion – Diabetic patients with no complications can be very well managed on day care basis cost effectively.

KEYWORDS

INTRODUCTION

India is a developing and poor country, especially rural India. Our region Dhule, whose majority of areas are considered to be tribal areas, financial condition is the main stay. As the prevalence of diabetes is increasing in rural population as well, which may be due to change in diet and lifestyle, incidence of diabetic foot is also increasing in this population.

Diabetic foot patients many times have abscesses, non-healing ulcers, dry or wet gangrene of toes and maggots. These patients often require surgeries in the form of incision and Drainage, debridement, fasciotomies, and amputation of gangrenous toes and removal of maggots. Simultaneously, patients also require medical management as diet control, insulin therapy and injectable antibiotics for which admission becomes necessary. This gives patients a big financial burden.

In this study we have treated 15 patients who underwent various surgeries for diabetic foot and medical treatment on day care basis to reduce the cost of treatment.

MATERIAL AND METHODS

All 15 patients were from Dhule, or within 30kms of Dhule city. Patients' age group was from 45 years to 65 years, male as well as female patients were selected. None of the selected patients had gross septicemia or ketoacidosis and those with uncontrolled DM required admission, thorough evaluation and treatment time to time by physician.

Criteria for selection of patients:-

All the patients were evaluated thoroughly by physician and anaesthetist prior to surgery.

1. All patients were ASA grade I to II
2. None of them had severe asthma or COPD
3. BP less than 160/100 mm Hg
4. No hepatic and renal impairment.

5. No gross uncontrolled DM and ketoacidosis
6. Patients on anticoagulants, digoxin and antiarrhythmic drugs were excluded.

All the patients were counselled beforehand that they might have to continue admission in case of post operative surgical or anesthetic complication.

Table 1 - Preoperative investigations profile of 15 patients.

Sr no.	HB gms/dl	WBC count polymorphs %	Sugar E PP mg/dl	S.creat	S. Bil-irubin	Urine Ketones	Urine Sugar Proteins
1	10	14000/79%	186/288	0.9	1.4	Nil	+/Nil
2	10.2	15000/80%	190/290	0.8	1.3	Nil	+/Nil
3	10.4	15600/82%	180/276	0.9	1.2	Nil	+/+
4	11	16200/79%	156/258	1.2	1.2	Nil	++/Nil
5	9.8	17000/80%	153/276	1	1.3	Nil	++/Nil
6	11.2	16200/80%	147/290	1.2	1.2	Nil	+/Nil
7	12	18000/80%	137/257	1	1.2	Nil	++/Nil
8	13	17500/81%	139/278	0.9	1.3	Nil	+/Nil
9	9.6	19300/84%	147/256	0.9	1.3	Nil	++/+
10	10.2	14700/82%	167/278	1.3	1.3	+	++/+
11	11	16200/80%	176/226	0.9	1.2	Nil	++/Nil
12	12.8	17300/82%	182/256	1.2	1.2	Nil	++/Nil
13	12.2	15700/81%	190/260	0.8	1.3	Nil	+/Nil
14	12	16200/80%	118/257	0.9	1	Nil	++/Nil
15	11	15500/80%	128/260	1.2	1.2	Nil	+/Nil

PREOPERATIVE PREPARATION

All patients were given injection Clindamycin 300 mg IV and Injection Metrogl 100 cc IV preoperatively. All patients were given thorough wash of feet with antiseptic soap prior to surgery.

ANESTHESIA

- Pre-anaesthetic medication in the form of small dose of Injection Fortwin and Injection midazolam given to avoid unnecessary postoperative sedation.
- Induction was given by Injection Propofol though expensive but recovery is fast and uneventful .The drug has antiemetic action so post-operative nausea and vomiting considerably reduced.
- Some patients required Injection Ketamine in small doses to complete the procedure.
- All patients were inserted diclofenac suppository postoperative and Injection Tramadol intramuscularly as pain killer.
- One patient required O2 supplement for 20 mins.

DURATION OF SURGERY

- Painting and draping done prior to anesthesia to reduce the duration of anesthesia.
- The time required for surgery was on an average 20 to 30mins.

SURGICAL TECHNIQUES

- All 15 patients required incision and drainage and debridement to remove pus, pus flakes and dead tissue.
- In this series seven patients required amputation of toes for dry/wet gangrene.
- Seven patients required fasciotomies in foot extended up to ankle.
- 2 patients had maggots which were removed.
- All patients were given wash with H2O2, Betadine and normal saline.
- Complete hemostasis was seen which is the key of success in this series.
- 2 required skin grafting after 10 days which was done again on day care basis.

Table 2 – Types of surgeries used in our patients

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Types of Surgeries	Number of patients
Incision and drainage	15
Amputation	7
Fasciotomy	7
Maggots removal	2
Skin grafting	2

OBSERVATIONS AND RESULTS

Post-operative recovery was smooth in all patients.

- Patients were almost completely awake and could go to toilet on their own without assistance in next 3 to 4hrs.
- One patient had running temperature and had tachycardia postoperatively, which could have been because of bad anaerobic infection. Therefore, the patient was advised to continue admission with physician for better medical treatment in the form of antibiotics and sugar control.
- No active bleeding occurred from all 15 operated feet.
- All the patients were allowed to eat 3 to 4 hours after surgery.
- Only when patient required admission for ongoing septicemia and ketosis, he was thoroughly investigated thereafter and was found to have hypoproteinaemia. Patient was admitted for 3 days thereafter was discharged with full recovery and was called for follow up as other 14 patients.



Figure 1 – A healed wound after surgery



Figure 2 – Pre and post-operative photograph. Amputation of 2nd toe was done



Figure 3 - Pre and post-operative photograph. Thorough debridement with skin grafting was done.



Figure 4 - Pre and post-operative photograph. Thorough debridement with skin grafting was done.



Figure 5 - Post-operative photographs of patients in which amputation was done



Figure 6 - Post-operative photographs of patients in which amputation was done

FOLLOW UP

- Patients from city area were advised to follow up after 48 hours and thereafter daily for dressing.
- Other patients nearby city were advised sterile dressing at local primary health center after 48 hours and were called for follow up after 5 days.
- All our patients were counselled about the importance of daily dressing, oral antibiotics, antidiabetic treatment, strict limb elevation and diet control.
- They were also explained the importance of regular follow up.
- All patients were prescribed
 1. Capsule Clindamycin 300mg BD for 14 days.
 2. Tablet Metrogl 400mg BD for 4 days.
 3. Tablet Trypsin + Chymotrypsin BD for 5 days.
 4. Tablet Multivitamin 1 OD for 1 month
 5. One patient who had hypoproteinemia required protein supplement for 1 month.

All patients were followed strictly for dressings. All feet healed in time period of 1 to 1.5 months.

BENEFITS NOTED

1. Reduced hospital stay and hence cost .
2. Low incidence of serious postoperative morbidity.
3. Reduced thromboembolism and hospital acquired infections mainly pseudomonas.
4. Minimal disruption to patients and their family life.
5. Early return to work.

CONCLUSION

When we can discharge appendectomies, cholecystectomies, hernioplasties and hysterectomies as day care surgeries then selective diabetic but non ketotic patients can be given fair trial of day care diabetic foot surgeries to reduce the overall cost of treatment.

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