

**Case Report (Open access)**

**CARBUNCLE, MODALITIES OF TREATMENT – CASE REPORT**

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**ABSTRACT-** The treatment of carbuncle is early administration of antibiotics and surgery. The commonest surgical approach is Saucerization and Incision & Drainage (I&D). Two cases are presented here, one underwent Saucerization and then primary split thickness skin grafting. Another underwent I&D for her carbuncle. They were followed up for 8 weeks to assess their outcome. Saucerization produced the shortest length of hospital stay while I&D resulted in shortest wound healing. As a new modality of treatment now-a-days two new modalities gaining popularity for better cosmetic purpose: primary split thickness skin grafting & transposition of local skin/musculocutaneous flap.

**Keywords:** carbuncle, surgery, good glycemic control

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**INTRODUCTION**

A carbuncle (plural-carbuncles) is made up of several skin boils (furuncles). The infected mass is filled with pus, fluid & dead tissue. It may be red & indurated & grows very fast with a yellow necrotic centre ranging size of a pea to golf ball. Susceptible groups include male sex, diabetic patients, Immuno-deficient patients, persons with poor hygiene & with poor health & persons having repeated friction from clothing & shaving. It is a bacterial infection caused mostly by *Staphylococcus aureus*. The treatment includes antibiotics (penicillin) to control spread of infection and surgery for debridement & local wound care by dressing for promoting healing process.

**Case Reports**

**A)** A 40 years old male got admitted at outpatient department with a painful swelling at his nape of the neck having it about a week ago. The swelling got enlarged in size and become red, indurated. Prior that a few months ago he was diagnosed as a case of type 2 DM & managed by oral hypoglycemic agents.

On admission he was febrile & his WBC count was  $20.4 \times 10^3/L$ . The size of his carbuncle was about  $10 \times 12$ cm. Saucerization was done and regular dressing done with a course of oral Antibiotics. Initially, patient was managed on oral hypoglycemic agents (Metformin 500mg BD & Glicazide 80mg BD). Later with consultation with Endocrinologist insulin was added. He achieved good glycemic control with insulin infusion & a healthy red granulation tissue appeared by regular dressing rendered him suitable for primary split thickness skin grafting about 2 weeks after Saucerization. The procedure was uneventful & a course of injectable antibiotics was given. The patient was discharged on 4<sup>th</sup> POD with advice of follow-up visit. On follow-up visit his wound area was quite healthy. Healing was excellent & patient wasn't readmitted with further complications of carbuncle or sepsis. The figures illustrate the sequences of entire case study.

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**A) After Saucerization the wound area with healthy granulation tissue**

Received: 31 July 2015/Revised: 18 August 2015/Accepted: 29 August 2015

**B)** A 52 years old diabetic female got admitted at the emergency department with a painful swelling at upper part of her back. Which then spreads to neck? It was red, indurated & patient had systematic upset. Incision & drainage was done & her hyperglycemia was treated with a combination of regular & long acting insulin. A course of antibiotics was given. After regular dressing she also underwent Primary split thickness skin grafting. She discharged on 5<sup>th</sup> POD with a course of antibiotics. The patient had not readmitted with any complications or sepsis. Healing was quite satisfactory on follow-up visit.



**B) Wound after primary split thickness skin grafting**

## DISCUSSION

A carbuncle is a deep seated mass of fistulous tract in between infected hair follicles which has multiple pustular openings onto the skin. The infected necrotic centre is walled off by a pseudocapsule. There is usually a rim of cellulitis & inflammation around the centre. Associated folliculitis also happens. However, the presence of carbuncle indicates that the immune system is functioning. It occurs in both sexes but males are slightly more prone to develop & also the elderly ones. The commonest sites involved are the nape of the neck & upper part of back as there is extensive loose fascial plane here. Patients with carbuncle also present with fever, fatigue, generalized discomfort & sick feeling. Itching may occur before development of Carbuncle. It is highly contagious may spread to other sites in the infected person and also to others who are in close contact with the patients. Recurrence is quite common after complete recovery. Complications includes -a) Abscess of brain, skin & of other organs viz kidney, b) Endocarditis, c) Osteomyelitis, d) Permanent scarring, e) Sepsis etc. Diabetic patients are more vulnerable to develop carbuncle included in the heading of diabetic dermopathy as demonstrated by 2 cases here. Some patients may present with sepsis which requires early administration of antibiotic and urgent drainage of infection.

Saucerization includes excision of necrotic centre its surrounding cellulitis. This technique results in a large wound which is dressed & allowed to heal by secondary intention. I&D involves debridement of only necrotic centre. The surrounding necrotic inflamed tissue is not excised resulting wound is smaller in size. This technique rarely requires grafting because it heals fairly quickly. Case 2 demonstrate the postoperative wound by this less radical technique. The wound get completely epithelialized by 8 weeks in I&D while in Saucerization it takes a little bit more time for complete epithelialization. The antibiotics course was almost same in both cases. However, we are now able to treat skin infections with a wide range of antibiotics. Good glyceic control is a must to promote proper healing in Diabetic patients besides all these surgical procedures. If anyone have poor glyceic control following adequate surgical procedure sepsis is inevitable. In this case study both of the patient had satisfactory healing on follow-up visit because of good glyceic control. They did not have any complications for further readmission. The case study highlights the importance of Good Glyceic Control along with Antibiotics and surgical procedures in the treatment of carbuncle & their result. It needs to be emphasized here that this case series by no means establishes the superiority of either treatment. However it provides a basis to conduct a full scale- randomized trial to determine the best surgical approach along with conservative treatment of Carbuncle.

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