

Year : 1985 | Volume : 31 | Issue : 1 | Page : 16-9

## Surgery for the community in the community.

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**How to cite this article:**

Kowli S S, Parikh S K, Chaturvedi R M, Nayak M M, Mehta A P, Bhalerao V R, Bhalerao R A. Surgery for the community in the community. J Postgrad Med 1985;31:16-9

**How to cite this URL:**

Kowli S S, Parikh S K, Chaturvedi R M, Nayak M M, Mehta A P, Bhalerao V R, Bhalerao R A. Surgery for the community in the community. J Postgrad Med [serial online] 1985 [cited 2020 Jul 18 ];31:16-9

**Available from:** <http://www.jpgmonline.com/text.asp?1985/31/1/16/5421>

## Full Text

### INTRODUCTION

Indians are reluctant to undergo any operation and if they have to travel a distance to reach the hospital, they keep on postponing the evil day until complications supervene. Hence, we decided to conduct surgical operations in the community health centre (C.H.C.) of the K.E.M. Hospital at Malavani village, which is a field practice area of the same hospital, situated 35 km from the hospital, and houses a typically slum population of around 70,000 people. This paper describes the feasibility of such a project and its implications, and compares the post-operative infection rates for similar operations at the K.E.M. Hospital and at the community health centre.

### MATERIAL AND METHODS

The Malavani community health centre has already been described in an earlier publication.[3]

Three to five days before the actual day of operation, a "diagnostic camp" was held at the C.H.C. where a qualified surgeon examined the patients previously diagnosed by the Medical Officer of the C.H.C. A total of 9 such surgical camps were held from November 1980 to February 1984. During the last 4 "diagnostic camps", endogenous flora of 26 patients was studied by taking nasal, throat and rectal swabs, and their antibiotic sensitivity was determined. A similar study of the endogenous flora was also conducted in 29 patients undergoing similar operations at the K.E.M. Hospital.

At the C.H.C., the operations were carried out in a mobile van\*\* equipped with surgical theatre facilities. On the day before the operation, the interior of the van and the operating table were cleaned with ordinary soap and water; they were re-cleaned with 5% phenol solution on the day of operation. The front and rear exits of the van were then securely closed and the van was driven from the K.E.M. Hospital to the C.H.C. The surgical team consisting of 2 operating surgeons (who conducted alternate operations), one anaesthetist, one theatre sister, and one theatre assistant, as well as the sterilised operating equipment, were taken to the C.H.C. by a smaller transport vehicle.

During 26 operations carried out in the last 4 operative camps, blood agar petri dishes (settle plates) were exposed in the operation theatre of the van; further, wound swabs were collected from the patients just prior to the closure of the skin incision. A similar exposure of settle plates and wound swab collections were conducted in 29 patients undergoing operations at the K.E.M. Hospital. All swabs collected at the C.H.C. were

cultured for aerobes; those collected at the K.E.M. Hospital were cultured for aerobes and anaerobes. Antibiotic sensitivity of the cultured organisms was determined by standard methods.

All operations at the C.H.C. were conducted under local anaesthesia, and a single I.V. dose of 1 gm of chloramphenicol was given intra-operatively as the sole antibiotic coverage. The operations at the K.E.M. Hospital were carried out under various types (local, spinal, general etc.) of anaesthesia. Two doses of I.V. chloramphenicol, first one at the time of starting the operation and the second, 6 hours later, were given in all the cases.

[Table 1] lists the operations done at the C.H.C. from November 1980, to February 1984; it also lists similar operations done by the same surgical unit in the K.E.M. Hospital from January 1983 to December 1983. Nineteen other surgical procedures (including 9 sphincter stretchings, 2 Thiersch's stitches, 2 local hydrocortisone injections and 6 incision and drainage of abscesses) done at the C.H.C. were excluded from the present analysis as no formal skin incision through healthy tissues was carried out in them.

All patients at the C.H.C. were sent home within 2-4 hours of surgery and were asked to report back to C.H.C. in case of any problem. Further dressings and suture removal were done by the medical officer at the C.H.C. A record of all the complications was maintained and all patients were reviewed at the next "diagnostic camp". Patients operated upon in the K.E.M. Hospital were discharged from the hospital in 1-3 days.

## RESULTS

At the C.H.C., the youngest patient was 3 months old while the oldest was 85 years old, with 75% of the patients belonging to the 3rd and 4th decades; fifty five patients were males and 22, females. At the K.E.M. Hospital, the youngest patient was 11 years old and the oldest, 73 years; 109 patients were males and 17, females.

Microbiological studies of swabs taken pre-operatively from patients showed similar endogenous flora at the C.H.C. and the K.E.M. Hospital [Table 2]. Organisms from patients operated upon at C.H.C. were sensitive to all commonly used antibacterial drugs; those grown from patients operated upon at the K.E.M. Hospital were resistant to ampicillin, tetracycline and penicillin. Intra-operative wound swab cultures grew no organisms at either place. Settle plates did not grow significant§§ number of organisms at either place.

One patient (1/77) developed postoperative wound infection at the C.H.C., whereas 13 patients (13/126) developed wound infection at the K.E.M. Hospital. The difference was statistically significant ( $p < 0.001$ ).

## DISCUSSION

Surgical camps for carrying out cataract operations, vasectomies and tubectomies are commonly held in the community centres all over India. However, to the best of our knowledge, this is the first report of camps taking general surgery to the doorsteps of the community. Seventy seven operations were carried out in 9 camps, an average of about 9 operations per camp. Each operation camp lasted for 4-5 hours with one surgeon operating at a time. The other staff was as described above. This compares favourably with the composition of the surgical team carrying out operations in the K.E.M. Hospital.

The endogenous flora of the two groups of patients was similar; however, in contrast to patients operated upon at K.E.M. Hospital, the organisms of those operated at the C.H.C. were sensitive to all commonly used antibacterial drugs. Patients operated upon at the K.E.M. Hospital harboured some resistant organisms after only 24 hours of hospitalization. On the other hand, settle plates showed that the operating environment in the van was as clean as that in the formal operation theatre at the K.E.M. Hospital. Finally, the wound infection rate was convincingly lower at the C.H.C. than in the K.E.M. Hospital.

During the year 1982-1983, the per diem hospitalization expense in the K.E.M. Hospital was Rs. 83.0 per person.[1] By contrast, the expense per operation at the C.H.C. was about Rs. 25-30 only.

The patient acceptance was good. Probably, the availability of surgical expertise near their homes was a major contributing factor. Further, their confidence was probably boosted up by the good results brought about by the lack of wound infection. Finally, the patient could return home the same day, and could stay with his own family; this also must have contributed to the patient acceptance of camp surgery.

## ACKNOWLEDGEMENT

We thank the Dean, K.E.M. Hospital and Seth G.S. Medical College, Bombay, for permitting us to report the hospital data.

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Saturday, July 18, 2020

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