

## COMPARISON OF AMBULATORY AND INPATIENT CLEFT LIP SURGERY FOR ADULTS

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**Background:** Ambulatory cleft lip repair after its acceptance in developed countries is also becoming popular in developing world. This study was performed to compare the outcomes of ambulatory cleft lip repair with the inpatient group for adult patients. Objectives were to compare outcome after ambulatory and inpatient cleft lip surgery for adults with respect to perioperative complications (Early: pain, oedema of upper lip, bleeding, nausea or vomiting, infection, dehiscence; Late: visible scar and white roll discrepancy), to compare the economic benefits, and evaluate patient satisfaction in terms of acceptance for ambulatory surgery. **Methods:** This comparative study is carried out in Plastic Surgery Department, King Edward Medical University, Mayo Hospital, Lahore. The study included 80 adult patients fulfilling inclusion criteria and were randomly divided into two groups, i.e., Ambulatory (Group-A, n=40) and Inpatient (Group-B, n=40). Those belonging to ambulatory group were worked up on OPD basis, advised to report on morning of surgery, operated under loco-regional anaesthesia and were discharged on same day. Patients of inpatient group were admitted two days before surgery, worked up in ward, operated under general anaesthesia and were discharged on 2<sup>nd</sup> day. **Results:** Ambulatory cleft lip surgery can be easily performed under loco-regional anaesthesia. Perioperative complications between these groups were comparable. Hospital stay was significantly reduced in ambulatory surgery. The patients felt more satisfied after ambulatory than inpatient surgery. **Conclusion:** Ambulatory cleft lip repair for adults is as safe as inpatient surgery. It is dependable option and can be successfully performed in our setup. It should be considered whenever possible due to cost effectiveness, reduction of waiting lists, earlier discharge and better utilisation of hospital resources.

**Keywords:** Cleft lip, Ambulatory surgery, Inpatient surgery, local anaesthesia

### INTRODUCTION

Cleft lip is a congenital deformity of head and neck. It results in distortion and disfigurement of upper lip and nose. Most common presentation is combination of cleft lip and palate (50%) followed by isolated cleft lip (20%). Unilateral cleft lip is much more common than bilateral cleft and is more common in males than females. Nowadays unoperated cleft lip in developed countries is very rare but in developing countries a significant number of cases are reported in adults.<sup>1</sup> Delay in presentation is usually due to lack of awareness, poor health facilities in rural areas, increasing cost of treatment and also shortage of bed space in specialised centres leading to long waiting lists. It is a major cause of facial disfigurement and psychological upset in these patients. Adult cleft lip repair is often more challenging than repair at standard age of fewer than 2 years because of significant increased size secondary to body growth.<sup>2</sup>

Successful cleft lip repair depends on smoothness of operation, fewest complications, minimal cost and earlier discharge. Challenges faced during cleft lip surgery are choice of operative technique, type of anaesthesia to be used, and postoperative care. Routinely patients are admitted 2 days before surgery, operated under general

anaesthesia and in busy units of tertiary care hospitals they have to wait for longer time for the availability of operating list. They are discharged on 2<sup>nd</sup> day. It causes economic burden on patients and suffering for attendants.

Ambulatory surgery had drastically changed cleft lip repair in recent decades.<sup>3-6</sup> It is becoming increasingly popular among plastic surgeons as being done under loco-regional anaesthesia (blocking both infraorbital nerves).<sup>6-8</sup> The fact that blocking both infraorbital nerves completely anaesthetised the upper lip had contributed to increasing number of ambulatory adult cleft lip surgeries. In ambulatory surgery there is minimal disruption of patients' daily living and they are discharged on the same day, i.e., hospital stay in ambulatory surgery varies from few to 23 hours. Complications after ambulatory surgery are minimal and comparable. Hospital resources are utilised in much better way as more beds are available for other needy patients, However loco-regional anaesthesia has its limitation; patients are awake and anxious.

Ambulatory cleft lip surgery had been practiced for many years in developing countries but no study has been done to compare its safety. This study compares outcome in terms of complications (early and late), hospital stay and acceptance of procedure between ambulatory and inpatient cleft lip surgery in our setup.

**PATIENTS AND METHODS**

This cross-sectional, comparative study was carried out in Plastic Surgery Department, Mayo Hospital, King Edward Medical University, Lahore from October 2008 to April 2010.

Eighty responsible adult patients ranging from 16–40 years of age were selected. It was made sure that they can be looked after at home overnight by educated and responsible attendant and they live within one hour drive from the hospital. All patients were admitted through OPD.

Patients excluded were those requiring nasal correction and those having major cardiovascular, renal or respiratory disease. Patients on anticoagulants or systemic steroids were also excluded.

The patients were randomly divided into two groups, i.e., Ambulatory group (Group-A, n=40) and Inpatient group (Group-B, n=40). All patients were admitted through OPD fulfilling selection criteria and only class I and II of ASA classification were included. Informed consent was taken from all patients.

Patients of group-A (ambulatory) were worked up through detailed history, examination and necessary investigations on OPD basis. They were advised to report on morning of surgery and were operated as first case under loco regional anaesthesia. Bilateral extraoral, infraorbital nerve block was performed using 2% Xylocain with 1:100,000 adrenaline and 0.5% bupivacaine; 2 ml were injected at each infraorbital foramen and 1 ml was injected into the lip.<sup>8</sup> I/V line were established and arterial oxygen was monitored by pulse oximeter. Patients of group-B were admitted 2 days before surgery, worked up in ward and were operated under general anaesthesia. All patients were given 1 gm Cephadrine preoperatively. Millard’s repair was most common procedure performed.<sup>9</sup> Sufficient postoperative analgesia was given depending upon pain. Patients of group B were kept NPO for 4–6 hrs and those of group A were allowed to take sips whenever desired. Patients of group A were discharged on day of operation, when they fulfilled discharge criteria, i.e., fully oriented, able to tolerate fluids, no or minimal pain and walk without assistance. Wound was dressed for 24 hrs and then antibiotic skin ointment was applied. Patients of group B were sent home on 2<sup>nd</sup> postoperative day. All patients were followed up on 8<sup>th</sup> postoperative day, one month and six month.

**RESULTS**

Eighty patients fulfilling inclusion criteria were randomly divided into two groups, i.e., Ambulatory group (Group-A, n=40) and Inpatient group (Group-B, n=40). In Group-A, all patients had unilateral cleft lip, of which 18 (45%) had incomplete, 17 (42.5%) complete, and 5 (12.5%) had microform cleft lip. Mean age of

presentation was 22.6 yrs. All cases were operated under loco-regional anaesthesia which was successful in 100% cases with no complications.

In Group-B, all patients had unilateral cleft lip. Twenty (50%) had complete, 16 (40%) incomplete, and 4 (10%) microform cleft lip. Mean age of presentation was 22.7 yrs. They were operated under general anaesthesia and 1:100,000 adrenaline solution was injected locally into the lip to reduce bleeding. Millard’s repair was most common surgical procedure done in both groups.

Other early complications seen in Group-A (Table-1) were wound infection in one case (2.5%), oedema of upper lip in 5 (12.5%) patients, dehiscence in 2 (5%) cases and 2 (5%) cases of nausea or vomiting were seen. In Group B wound infection occurred in 2 (5%) cases, oedema of upper lip in 4 (10%) cases, dehiscence in 2 (5%) cases and nausea or vomiting in 6 (15%) cases. No case of bleeding was seen in both groups (Table-1).

There was no significant difference between intra-operative and postoperative complication rate. Mild to moderate postoperative pain was major complaint in both groups which was measured by numerical rating scale 0–10 (0=no pain, 10=worst possible pain). Mean pain score for Group-A was 3.27±0.892 while of Group-B was 3.35±0.728 (Table-2). Results indicate that mean pain score in both groups is almost same with no statistical difference (*p*>0.05). Late complications (Table-2) such as discrepancy of white roll and visible scar were seen in 3 (7.5%) and 2 (5%) cases of Group-A and 2 (5%) and 2 (5%) of Group-B respectively. On percentage comparison of complication in both groups results were showing the same results.

Mean hospital stay for Group A was 7.107±1.17 hrs and for Group-B it was 48±5.282 hrs (Table-2). Results were statistically significant (*p*<0.05) on the average hospital stay is high in Group-B than Group A. All 40 (100%) patients of Group-A liked ambulatory surgery while 90% of Group-B liked inpatient surgery.

**Table-1: Early complications**

	Group A (n=40)	Group B (n=40)
Infection	1	2
Oedema of lip	5	4
Bleeding	0	0
Nausea and vomiting	2	6
dehiscence	2	2

**Table-2: Mean Pain Score, delayed complications and Hospital stay**

	Group A	Group B
Mean pain score(NRS 0–10)	3.27±0.892	3.35±0.728
Delayed Complications		
White roll discrepancy	3	2
Visible scar	2	2
Hospital Stay (Hours)	7.107±1.17	48±5.282



**Figure-1: Result of ambulatory cleft lip repair under loco-regional anaesthesia**

## DISCUSSION

Cleft lip is complex congenital deformity of head and neck. In developed countries children born with cleft lip deformity are managed at earlier age but in developing countries especially in rural areas patients often present in adult age because of social or financial reasons and also may not realise that cleft lip can be repaired. Health care system in rural areas does not have specialised centres to deal with cleft lip repair and patients have to go to tertiary care hospitals further leading to delay in presentation and also increasing load on these specialised centres. Delay in management of cleft lip leads to more facial disfigurement and need comprehensive management. Due to too much load on specialised centres patients have to wait for long.

Ambulatory cleft lip repair has been practiced in developed countries since 1980s<sup>10</sup>. It was introduced due to advantages like reduction of waiting period, decrease suffering of attendants, reducing financial burden on patients and hospital.<sup>2-4,11</sup> In this study ambulatory surgery has been compared with inpatient surgery to evaluate its safety with respect to complications, hospital stay and patient satisfaction.

Naveen *et al*<sup>8</sup> performed a study to assess whether regional anaesthesia (blockage of infraorbital nerve) will allow ambulatory cleft lip repair and found that it provides sufficient time for repair and also postoperative analgesia for 6 to 24 hrs. Our study has shown that ambulatory cleft lip surgery can be performed safely under loco-regional anaesthesia. Loco-regional anaesthesia is very easy and effective technique.<sup>7,8</sup> It completely anaesthetised upper lip for desired period of time, i.e., 45–60 minutes and allows the surgeon to perform proper repair smoothly without compromising quality of repair. Most common surgical

procedure performed in this study was Millard repair requiring significant soft tissue dissection to ensure symmetry of upper lip and alar bases due to increased size of cleft. Same was the observation of other workers.<sup>2-4,6,10,12</sup>

The results of the present study also confirm the study of Rosen *et al* that intra-operative and postoperative complications in both groups are minimal and comparable, and did not necessitate immediate intervention. Most common early complication seen in both groups was mild to moderate pain which was usually managed by NSAIDs.<sup>3,14</sup>

Morioka *D et al*<sup>16</sup> performed primary repair of untreated cleft lips in adult patients in different developing countries and noted that ambulatory cleft lip repair reduces cost, time, and manpower. It was also observed in our study that in ambulatory group patients were discharged on the same day significantly decreasing duration of hospitalisation as compared to inpatient group and it did not affect their daily life.<sup>3-5,12,13</sup> All patients were satisfied with ambulatory surgery and it is accepted by both doctors and patients because of less financial constraints on patients, minimal complications, and earlier discharge. In our study more patients felt satisfied after ambulatory than inpatient surgery.

By conducting cross-sectional comparative study it was evident that ambulatory cleft lip surgery for adults can be successfully performed in our setup and comparable results in terms of complications can be obtained and hospital stay is significantly reduced.<sup>10-13</sup> Moreover, this mode of treatment is getting more acceptance among patients who give greater importance to early return to routine activities and work.

## CONCLUSION

Ambulatory cleft lip repair for adults is as safe as inpatient surgery and can be successfully performed. It should be considered whenever possible due to multiple advantages to the patient and health care system.

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