

ORIGINAL ARTICLE

Use of Antibiotics in Cleft Palate Post Operative Patients

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ABSTRACT

Background: Cleft palate surgeries are one of the most common surgeries done by Plastic surgeons.

Aim: To determine the role of postoperative antibiotics in terms of incidence of complications in cleft palate surgery.

Study Design: Prospective randomized control trial.

Place and duration of study: Department of Plastic Surgery, Bashir Hospital, Sialkot from May 2016 to January 2019

Methodology: Patients were randomly divided into two groups. Both groups received a single dose of injection Ceftriaxone (50mg/kg) about 30 minutes before incision. Group A (n=25) received a 5-day regimen of oral Amoxicillin + Clavulanic acid (15mg/kg/dose in three divided doses per day) post operatively. Group B (n=25) received 5-day regimen of oral Amoxicillin + Clavulanic acid (15mg/kg/dose in three divided doses per day) plus oral Metronidazole (7.5mg/kg/dose in three divided doses) for 5 days postoperatively. Patients were followed up postoperatively at 2 weeks, 1month and 2 months for complication such as infection and wound dehiscence.

Result. Candidates belonging to Group A, (Amoxicillin + Clavulanic acid group) were reported to have Infection 6 (24%) (P 0.005) and delay oral intake. Candidates who were administered oral Amoxicillin + Clavulanic acid (15mg/kg/dose in three divided doses per day) plus oral Metronidazole (7.5mg/kg/dose in three divided doses) 2 patients (8%) had infection in group B which was settled with improvement in oral hygiene.

Conclusion: whose candidates who were admitted or stayed for longer duration of time in hospital had insufficient and poor dietary intake. One of the candidates was again admitted due to being dehydrated along with rotavirus whereas group A 24% patients got infected on the other end group B only 8% patients got infected. In net shell, this study revealed that use of postoperative antibiotics (Amoxicillin + Clavulanic acid and metronidazole) can reduce the incidence of infection and results in better surgical outcome of cleft palate surgery

Keywords: cleft palate repair, Amoxicillin, Clavulanic acid, Metronidazole, Prophylactic Antibiotics

INTRODUCTION

Traditionally, In order to minimize morbidity, cleft palate repair has relied on care via hospital team. With the help of Perioperative management patients reported shorter hospital stays. It is economically benefit for patient to be admitted at same day in hospital for operation but with this stagey there is no change in the incidence of complications. With the aid of our case reach, we successfully shifted patient to ambulatory cleft lip repair¹ and then ambulatory secondary bone grafting of alveolar cleft defects².

Moreover, we also described shorter duration of hospital stay by patient of cleft repair. In case of pediatric plastic surgery, success depends upon recovery postoperatively, Antibiotics regime adequate analgesia, nausea management and sufficient number of care takers at hospital. In case of cleft surgery, hospitalization duration has been disputed and may cause infection. Lees and Pigott³ advocated a 5-day stay. They observed complications hemorrhagic and respiratory postoperatively within 48 hours. They performed surgeries on 140 cleft patients that reported complications rate 24%. Eaton et al⁴

after two years, represented 194 palatoplasties, with a shorten length of hospital stay from 3-14 days.

The complication rate remained unchanged with respect to palatoplasty of patients when duration of stay in hospital were compared along with antibiotic regime.

Cronin et al⁵ In 2001, depicted the safety of 24-hour admissions in 62 candidates. The complication rate was overall 3.8% with respect to his cohort that included two small palatal fistulas and two partial palatal dehiscences. A long acting anesthesia, Marcaine long-acting has been administered widely in case of infants, especially for infiltration at edges of wound and blocking nerve. 3mg/kg is regarded as the maximum safe dose corresponding to concentration of plasma being 2 g/mL⁶. Many studies have been published in favor of steroid therapy perioperatively in order to prevent distress and fever postoperatively. In surgical repair of cleft palate 7–9 up till now, no case researches depicted shorter staying span at hospital in case of cleft palate patients.

The objective of the study was to determine the role of postoperative antibiotics in terms of incidence of complications in cleft palate surgery.

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PATIENTS AND METHODS

Surgical procedure included in this case reach involved soft palate surgical repair (n=50), hard palate surgical repair (n=30), or combination of soft and hard palate repair (n=20). The surgical repairs were performed using a Langenbach technique for soft palate and Veau Wardill Kilner technique for combined soft and hard palate cases. Congenital syndromes were identified in 5 candidates (10%). Their ages range from 9 months to 7 years. Informed consent, both for the purpose of research and surgery was taken. A retrospective research was carried out of 50 cleft palate candidates, outpatient clinic records of hospital visits and the inpatient records, were viewed with respect to the patients who underwent into palatoplasty. At the time of surgical repair about 75 charts were assessed with respect to candidate age at the time of surgical repair, concomitant syndromes presence, type of repair of palate, first oral feeding intake after operation, length of stay at hospital and need for reoperation and readmission. The management of surgery with respect to cleft palate preoperatively still remains disputable. In past case reaches depicted admission to hospital 2 to 5 days prior to the procedure but recent case researches showed that in congenitally screened patients, duration of 24 hours is enough for admission. Performed cleft repair surgeries in about 50 cleft palate candidates

Description of Procedure For exploring cleft palate, The Dingman-Gillies retractor was applied. By the aid of Langenbach technique for soft palate and Veau Wardill Kilner technique for combined soft and hard palate cases, surgical repair of all clefts were done. Group A received a 5-day regimen of oral Amoxicillin + Clavulanic acid (15mg/kg/dose in three divided doses per day) post operatively. Group B received 5-day regimen of oral Amoxicillin + Clavulanic acid (15mg/kg/dose in three divided doses per day) plus oral Metronidazole (7.5mg/kg/dose in three divided doses) for 5 days postoperatively. All the candidates belonging to Group A (n=25) were administered oral Amoxicillin + Clavulanic acid preoperatively and postoperatively. Before marking an incision, with the aid of 1% lidocaine with 1/100,000 epinephrine, mucosa was infiltrated. Candidates belonging to Group B patients (n=25) were administered antibiotics Amoxicillin, Clavulanic acid and oral Metronidazole preoperatively and postoperatively. Criteria included for discharging patient was sufficient airway, cleaned surgical site, pain control, sufficient oral intake, competent candidates, and home environment. Feeding protocol of candidates was decided postoperatively. Candidate's Parents were told to feed them by aid of soft catheter, Sippy cup and spoon. Surgical repair of soft palate was carried out in 30 candidates whereas hard palate repair was done on 20 candidates, and finally combined soft and hard palate surgery was done on 50 candidates. About 5(10%) candidates were diagnosed with congenital pathologies secondary to cleft palate. For analysis statistically, Fisher exact test probability test was utilized.

RESULTS

The first feeding to operated candidates was given after duration of 7 hours and stay of candidate at hospital was

reported about 1.1 days. Candidates from both the groups were administered soft and liquid diet post operatively with respect to their age, nutritional needs without using bottles. No significant differences were noted with respect to management of hospital hygiene between both groups of candidates. Assessment of the candidates were made by surgical team for checking surgical site and oral intake of soft diet before discharging for group A, the median age recorded was 10 months (range, 2–70 months) while in case of group B, median age recorded was 9 months (range, 3–115 months). The staying for group A candidates in hospital was recorded to be 3-6 days where as in case of and group B, it was recorded 2-3 days. About 40% candidates belonging to group A patients were discharged from hospital within 24 hours as compared to 84% candidates belonging to group B. Statistically, this difference is noteworthy (P 0.005).two candidate was reported to be re admitted due to dehydration along with infection because of rotavirus. From surgery point of view there was no significant difference in surgical length of procedures of candidates belonging to groups A and B. However in case of group B only 1 patient underwent into concomitant cleft lip repair. After operation the first feeding time was also noteworthy among groups. In case of group A, it was recorded to be 8days after operation and in case group B it was 5days after operation (P 0.005).

	Group A+	Group B
Hard palate surgical repair (n=30)	18	12
Combination of soft & hard palate repair (n=20)	9	11
Gender		
Male	13	17
Female	12	8
Perioperative Antibiotics	Yes	Yes
Median age (months)	18	16
Hospitalize days	3-4	2-3

DISCUSSION

With our case research it was obvious that by using antibiotics Amoxicillin, Clavulanic acid and oral Metronidazole pre operatively and post operatively along with usage of local anesthesia resulted in shorter hospital stays of patient along with less infection with early feeling postoperatively after surgical repair of cleft palate. A research was carried out by Senders and Fung⁵ in 2011 and 2016 and also by Senders et al⁷ that stated that after palatoplasty, administration of antibiotics Amoxicillin, Clavulanic acid and oral Metronidazole preoperatively and post operatively showed small hospital stays and less complication. However none of these case researches depicted definitive conclusions due to the fact that one was weak with respect to retrospective methodology³ and the second one by using small size of sample. In 2015, the same case researcher proved the fact that by using antibiotics Amoxicillin, Clavulanic acid and oral Metronidazole postoperatively, reduction of airway distress post operatively was much significant (P 0.005) and as well as fever (P 0.03). After surgery, discharge eligibility, palatal fistula formation and oral fluid intake were not affected significantly. With respect to some critics administration of antibiotics Amoxicillin, Clavulanic acid and oral

Metronidazole postoperatively, can interfere with normal process of healing of the wound. Up till now, none of the case researcher proved this fact that there is increased incidence of palatal fistula formation, and delayed would healing after administration of antibiotics Amoxicillin, Clavulanic acid and oral Metronidazole postoperatively. Initially we had done surgical soft palate repair along with repair of lip. In such candidate's repair of soft palate was opted at age of 3 months then when the candidate reached at age of 9 months hard palate repair was opted. So, recently we were carrying out surgical repair of lips at 3 months and surgical repair of palate at 9 months. Our case research depicted decline in stay in hospital and starting of early feeding postoperatively by aid of intravenous steroids and long-acting local anesthesia. Post operatively, candidates were made to stay at recovery room for duration of 4 to 6 hours. By observing candidates carefully we were able to deduce significant complications such as obstruction of airways and bleeding. With respect to case research by Lees and Pigott⁸ after cleft lip and palate surgical repair, major complication was observed such as hemorrhage. All such cases were stopped immediately and candidates were administered blood bottles intravenously. Only one patient got discharged from hospital early i.e., 8 hours after surgery. Candidates in our case were discharged after duration of 1day from hospital. From the published case studies it was also observed that obstruction of air way might happen post operatively within duration of 3 hours.

CONCLUSION

The results of this study revealed that use of postoperative antibiotics (Amoxicillin + Clavulanic acid and metronidazole) can reduce the incidence of infection and results in better surgical outcome of cleft palate surgery.

Conflict of interest: Nil

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