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A Retrospective Study of Paediatric Emergency Surgeries attending a Tertiary Care Center in Northeast India

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I. INTRODUCTION

'By saving the life of one child we are adding 50-70 years of life'

With 1.21 billion people, India constitutes the second-most populous country in the world. Children represent 39% of India's population and those between 0-5 age group comprise 29% of the total population. Emergency conditions requiring surgery contribute substantially to the global disease burden. The global burden of surgical emergencies is described insufficiently. The bare estimates indicate a tremendous health burden. Low and middle income countries carry the majority of emergency conditions. In these countries the pattern of surgical disease is changing and capacity to deal with the problem is inadequate. [1,2]

Despite increasing awareness of the unmet burden of surgical conditions, India, a developing country, faces considerable challenges in the provision of paediatric surgical care. But the main challenge associated with paediatric surgery is its associated high mortality. Even today many developing countries including India lack the infrastructure and expertise in this specialty thus contributing to the increased mortality. This study aims to throw light on the emergency paediatric surgeries undertaken in a tertiary care center in Northeast India with a large catchment area without a separate paediatric surgery unit.The data presented in this study will be useful for both the surgical and public health communities to plan a more adequate response.[3,4]

Aims and Objectives

1. To study the aetiology of emergency surgeries done in children in a tertiary care center in Assam without a separate paediatric surgery unit.
2. To study the morbidity and mortality associated with these surgeries.
3. To study the age incidence and sex ratio of the patients who underwent emergency surgery.
4. To highlight the challenges associated with paediatric surgeries.

II. MATERIALS AND METHODS

This is a retrospective study done at Silchar Medical College from the period 1st January 2021 to 31st December 2021 on all the patients under 12yrs who underwent an emergency surgical procedure. The data is collected from the hospital records.

Inclusion Criteria

• All children under 12 years who underwent emergency surgery in the Department of General surgery in Silchar Medical College and Hospital, Silchar in the mentioned study period

Exclusion Criteria

• All children under 12 years of age undergoing the emergency neurosurgical procedures in the above-mentioned study period.

• Patients whose guardians who did not give consent for the operative procedure

III. RESULTS AND OBSERVATIONS

A total of 317 emergency surgeries were conducted during the study period in all age groups. Out of this, 38(12%) are children below 12 years.Out of the surgeries done in the study group during the study period, 32% of the emergency surgeries were done in females and the rest 68% in males. Most common aetiology was acute appendicitis (15.8%) followed by intestinal obstruction (15.8%), appendicular perforation (13.15%), intussusceptions (10.52%), imperforate anus(7.8%), perforation(7.8%), abscess(7.8%), obstructed hernia (5.3%), empyema thoracis(5.3%), haemo/pneumothorax(5.3%), enterocutaneous fistula (2.63%), haemoperitoneum (2.63%). Overall, 8 patients died accounting for 21% ofmortality. Highest mortality was reported in the neonatal period accounting for 75% of total mortality.84% of the cases were done under general anesthesia, 11% in local anesthesia and 5% under

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sedation. 11 patients (29%) required postoperative ICU care.

IV. DISCUSSION

Thirty-eight children under the age of 12years underwent emergency surgical procedures during 1 year comprising 12 percent of total emergency surgeries. Paediatric surgery is an essential component of public health; the surgical facilities must meet certain basic standards of safe practice. With the incidence of one in every 3000-4000 live births, approximately 87,000 under five Indian children with congenital anomalies need specialized pediatric surgical services.[5] The World Health Organization (WHO) Global Initiative for Emergency and Essential Surgical Care was established in 2005 to strengthen the delivery of surgical care in low-income countries. WHO has defined the types of essential and emergency surgeries that should be undertaken and the kind of surgical staff, infrastructure and supplies required in three levels of healthcare facilities i.e. small hospitals/health centers (Level 1), district hospitals (Level 2) and referral hospitals (Level 3).

Several recent surveys suggest that essential resources are not in place in rural hospitals in low-income countries. In our study setting, a separate paediatric surgery unit was not available and the catchment area served by the institute hada population of 43 million with about 15 percent belonging under the age of 6 years. The common emergency surgeries were done for acute appendicitis (15.8%) followed by intestinal obstruction (15.8%), appendicular perforation (13.15%), intussusceptions(10.52%), imperforate anus (7.8%), perforation (7.8%), abscess(7.8%), obstructed hernia(5.3%), empyema thoracis(5.3%), haemo/pneumothorax(5.3%), enterocutaneous fistula (2.63%), haemoperitoneum(2.63%). Overall mortality was 21%. The highest mortality was noted in the neonatal age group which accounts for 75% of the total mortality.29% required postoperative ICU care and the majority of ICU admission was in the neonatal and infant age group. Comparable studies in similar settings are scarce.

V. CONCLUSION

This study aims to emphasize the spectrum of work done by the general surgery unit without a separate paediatric surgery unit in the setup of tertiary care hospital affiliated with a State Government run Medical College. It also highlights the need of strengthening the paediatric surgical services by establishing a full fledgedpaediatric surgery department with a separate surgical ward and a well equipped surgical intensive care unit. This will ensure prompt and improved patient care and help bring down morbidity and mortality of children requiring surgical intervention.

Diagnosis	**0-28days (Neonate)**		**1month-1year (Infant)**		**1-3 year (Toddler)**		**1-5 year (Preschool)**		**5-12 years (School)**		**Total**	**Percentage (%)**
	M	F	M	F	M	F	M	F	M	F		
Acute appendicitis									4	2	6	15.8
Intestinal obstruction		1	1	1	2				1		6	15.8
Appendicular perforation									5		5	13.15
Intussusseption			2	1						1	4	10.45
Imperforate anus		3									3	7.9
Perforation		1							1	1	3	7.9
Abscess					1	0	1		1		3	7.9
Obstructive hernia			2								2	5.3
Empyema thoracis			1					1			2	5.3
Haemo/pneumothorax					1				1		2	5.3
Enterocutaneous fistula									1		1	2.6
Haemoperiton									1		1	2.6

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eum												
	0	5	6	2	4	0	1	1	15	4	38	100

Table 1 : Showing distribution of cases based on age, sex and aetiology

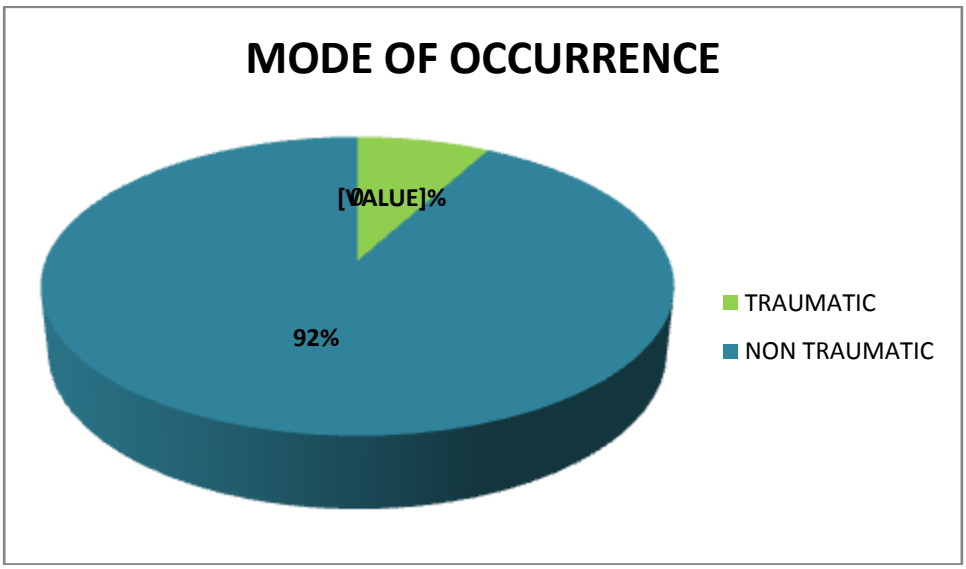

Figure 1: Pie chart showing the distribution of cases based on mode of occurence

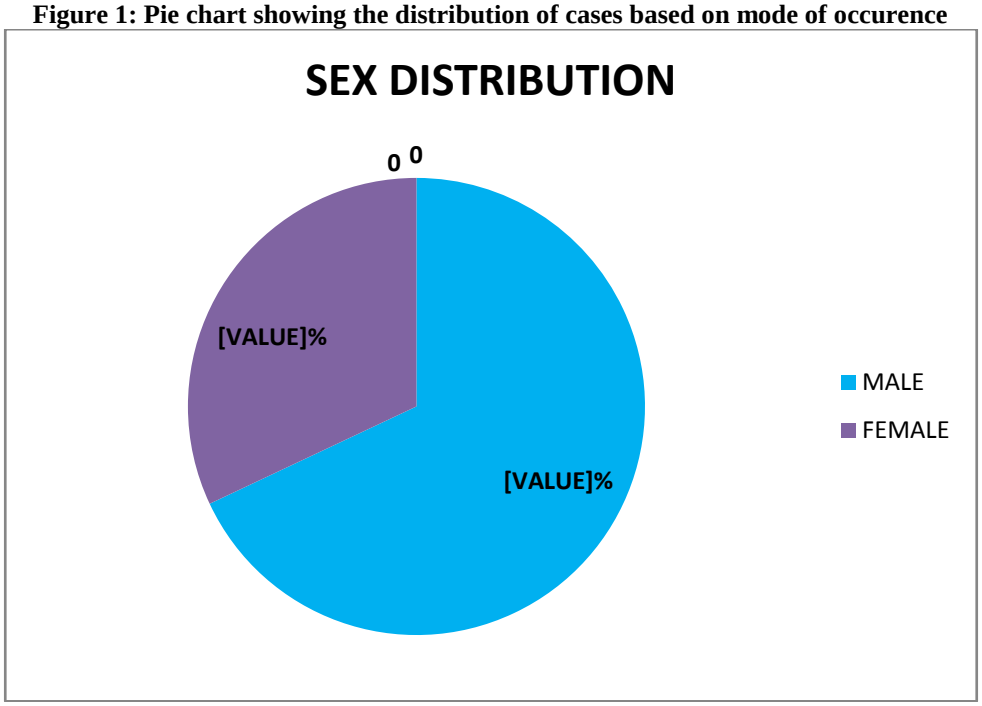

Fig 2 : Pie diagram showing distribution of cases based on the sex

Figure 3: Transverse colostomy done for a patient with imperforate anus (Ano rectal malformation)

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