



ORIGINAL RESEARCH PAPER

Medical Science

DEMOGRAPHIC ANALYSIS OF BRACHIAL PLEXUS INJURIES

KEY WORDS: Brachial plexus injuries, Demographic analysis

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ABSTRACT

A retrospective demographic analysis of brachial plexus injuries held at physical medicine and hand rehabilitation department under government Stanley, medical college hospital ,Chennai . The analysis are made among 35 patients .The productive age group of 21-30years males were injured in road traffic accidents by two wheelers and right side brachial plexus injuries are common .Upper brachial plexus injuries have more percentage of associated injuries. Education of public regarding speed control, awareness programs to college students may be the solutions for prevention of brachial plexus injuries.

INTRODUCTION

Brachial plexus injury may be caused by trauma (open or closed injury), compression, tumor, infection, inflammation, toxins, and others. Millesi classified brachial plexus injury into four levels. Suprarganglionic, infrarganglionic, supraclavicular, infraclavicular. Based on the surgeon's findings, adult patients may be diagnosed with any one of the following conditions; Neuropraxia; a stretched nerve. Neuroma ;a condition in which scar tissue has grown around a disrupted nerve. Rupture; one or more nerves are torn, but not at the spinal cord. Avulsion; the roots of the nerves are torn away from the spinal cord. Multiple root avulsion is the most common diagnosis in high energy traumatic brachial plexus injuries, such as occurs in a motorcycle or off road vehicle accident.

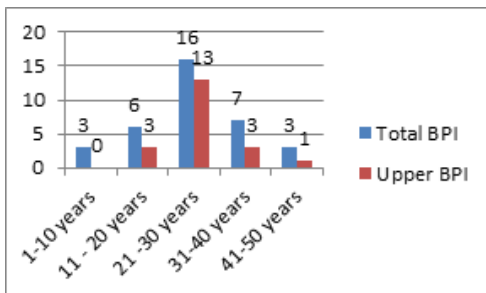
MATERIALS AND METHOD

We have clinically assessed 35 patients of brachial plexus injury who presented at the Institute of Research Rehabilitation of Hand Department of Plastic surgery from September 2012 to february2013. Assessment of each patient made and recording made in the proforma. After the history recording , Inspection finding were recorded. The main examination is to exclude the involvement of nerve roots by sensory examination and motor functions over muscle contraction were made.

RESULTS

Among 35 patients who were analysed , the commonest age group involved as the 21-30 years age group , which forms about 46%. The next common age group involved was 31-40 years group which is about 20%. This group of individuals are important for the development of the family and nation. Of these 35 patients , 20 patients had upper brachial plexus injury. Even among the patients with upper brachial plexus injury, the commonest age group was 21-30 years .

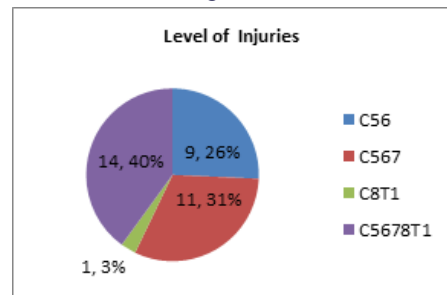
Figure.1: Age distribution of study participants



The Commonest sex involved is male 90% (M;18 to F;2), most probably because it is the male who are the fast motor cycle riders and so more prone for such injuries.

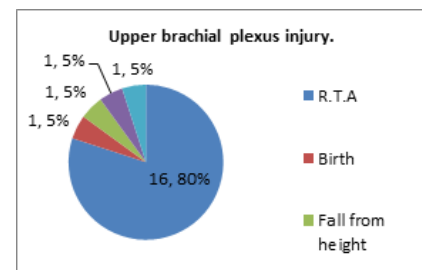
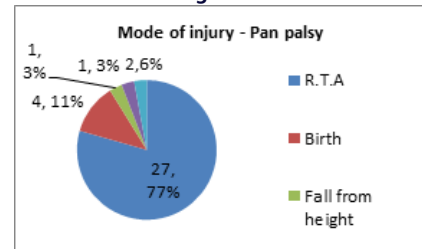
Out of the total of 35 patients involved with brachial plexus injury, 14 patients (40 %) had total palsy which involved all the roots brachial plexus.

Figure.2



The upper brachial plexus injury contributed 57% of the total. This upper brachial plexus injury consists of C5,6 and C 5,6,7 lesion categories. The C 5,6 level injury was seen in 11 patients (31%). Patients with C 8,T1 injuries formed only 3% of the total brachial plexus injuries were analysed. Side of injury, commonly occurs in right side which is about 60% probably due to right being dominant try to protect injury over other part of the body. So the dominant hand is commonly involved.

Figure.3



This was probably because of unique mode of injury in upper brachial plexus involvement where the forcible separation of the head and upper limb is the causative factor. Hence the force is borne by the head and shoulder.

Table.1

Type of Injury	WITH ASSOCIATED INJURIES	WITHOUT ASSOCIATED INJURIES
TBI	19(42%)	26(58%)
UPI	11(55%)	9(45%)

CONCLUSION

The study revealed that the productive age group of 21 to 30 years was commonly injured with brachial plexus injury. It was the males who were mostly involved. Total brachial plexus injury formed a large chunk of patients with brachial plexus injuries, but the second commonest involvement was the upper trunk lesion of C5,6 or C5,6,7. It was commonly the right side was involved and thus involved the dominant hand. Road traffic accidents with two wheelers formed the majority of cases with brachial plexus injuries. The demographic pattern of injuries of brachial plexus was almost similar when the total plexus injury and upper plexus injury were concerned, except in the presence of associated injuries, where upper lesion appeared to have more percentage of associated injuries.

Education of public regarding speed control, awareness programs to college students may be the solution for prevention of brachial plexus injuries.

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