



## Observation of anatomical sites of facial nerve palsy

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### Abstract

This study was done in keeping in mind to observe the common anatomical sites of facial nerve palsy. Main aim of study is to determine the anatomical sites and its implications to minimize the incidence and to evaluate the remedial measures. This work was carried out in the department of Anatomy, department of Medicine, department of Otolaryngology and Radio-diagnosis in Patna Medical College Hospital, Patna. A total of 60 number of patient having facial nerve palsy were studied clinically and radiologically. Selected cases were grouped into supranuclear and infranuclear. All the data including signs and symptoms were recorded in sheet particularly designed for this study. In the study it was observed that incidence of supranuclear type of paralysis is 81.70% and nuclear type is only 0.30% were as infra nuclear palsy is 15% therefore it is obvious that the most of the facial nerve palsy is of supranuclear type.

**Keywords:** otolaryngology, radio-diagnosis, facial nerve palsy

### Introduction

Facial palsy is a common clinical condition that causes the paralysis of any structure supplied by the facial nerve. This nerve mainly has the motor supply to the muscle of the facial expression and salivation and sensory supply function in the conveyance of taste sensation from anterior 2/3<sup>rd</sup> of the tongue and oral cavity. This nerve also supplies pre ganglionic para sympathetic fibers to ganglia of head and neck. At the origin the fibers of facial nerve loops around 6<sup>th</sup> cranial nerve nucleus before leaving the pons and comes out from the brain stem in between pons and medulla. The facial nerve lies medial to the 8<sup>th</sup> cranial nerve and passing through the internal acoustic meatus, facial canal of petrous temporal bone and finally comes out from stylo-madibular foramen then supplies the muscle of facial expression. The facial nerve widened in the facial canal and form geniculate ganglia on the medial side of middle ear where it turns sharply to emerge out through stylo-manibular foramen. Facial nerve palsy would typically mean any kind of impairment to the function of this nerve at any of the following anatomical sites. The sites of lesion may be

- i) Supranuclear part
- ii) At the brain stem
- iii) Infranuclear part

### Methods and Materials

A total of 60 number of patient having facial palsy clinically and radiologically confirmed, attended or admitted in the OPD/IPD of P.M.C.H, Patna is irrespective of age sex, religion were included in my study. The study was grouped into supra nuclear palsy and infanuclear palsy. All the data

including signs and symptoms of the cases were recorded in the sheet particularly designed for the study.

### Materials

pretested structured Performa, whisp of cotton, tuning fork(256Hz), digital camera, CT scan, sphygmomanometer. A Pre tested semi structural performa were used as a study tool. The acute stroke patients were subjected to CT scan of brain in the department of radiology to confirm the diagnosis of site of lesion. Infra nuclear types of facial palsy were diagnosed by clinical examination and proper history taking. Some cases showing any different etiology were subjected to FNAC for growth and CT for trauma. The result and observation were noted and presented in tabular form, statistical calculation were done in %. Photograph of patient were taken with consent.

### Observation

The results and observation of patients were individually studied and dates are recorded in a pre-existing performa and tabulated accordingly. All the patients are grouped into supranuclear type, nuclear type and infranuclear type. Distribution of number of patients and their percentage into three different types.

Table 1

| Type of Lesion          | No. of Cases | Percentage |
|-------------------------|--------------|------------|
| Supranuclear (Type-i)   | 49           | 81.70%     |
| Nuclear (type-ii)       | 02           | 03.30%     |
| Infranuclear (Type-iii) | 09           | 15.00%     |
| Total                   | 60           | 100.00%    |

**Table 2**

| Age in Years | Supranuclear | Nuclear | Infranuclear | Total |
|--------------|--------------|---------|--------------|-------|
| 00-10        | 00           | 00      | 00           | 00    |
| 11-20        | 00           | 00      | 01           | 01    |
| 21-30        | 00           | 00      | 01           | 01    |
| 31-40        | 03           | 00      | 03           | 06    |
| 41-50        | 04           | 01      | 01           | 06    |
| 51-60        | 18           | 00      | 01           | 19    |
| 61-70        | 14           | 01      | 01           | 16    |
| 71-80        | 07           | 00      | 01           | 08    |
| 81-90        | 03           | 00      | 00           | 03    |
| Total        | 49           | 02      | 09           | 60    |

**Table 3**

| Sex    | Supranuclear |        | Nuclear |       | Infranuclear |        | Total |        |
|--------|--------------|--------|---------|-------|--------------|--------|-------|--------|
| Male   | 41           | 82.00% | 02      | 4.00% | 07           | 14.00% | 50    | 100.0% |
| Female | 08           | 80.00% | 00      | 0.00% | 02           | 20.00% | 10    | 100.0% |
| Total  | 49           |        | 02      |       | 09           |        | 60    |        |

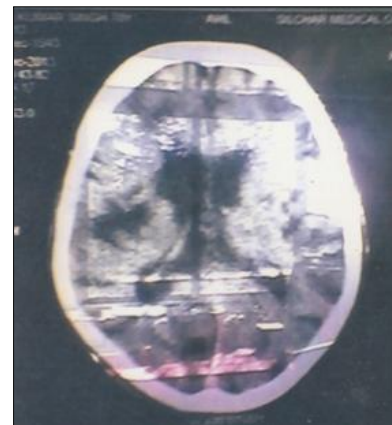
From the above table it was observed that the incidence of supra nuclear type of lesion occur in 81.70%, in nuclear type the lesion is 0.30, but in infra nuclear type lesion is 15%. It was found that supranuclear facial nerve palsy occurs in between 51-60 years of age group as observed in table2. Most of the infra nuclear facial nerve palsy in age group 31-40 years which occur at stylo-mastoid foramen of extra cranial part of facial nerve as per table-3. It has been found that most of supra nuclear and infra nuclear types occur in male sex than in female as per table-3.



**Fig 1:** supranuclear facial nerve lesion resulting in face deviation to left



**Fig 2:** infranuclear facial nerve lesion resulting in loss of wrinkling over forehead



**Fig 3:** cerebellar infarct

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