

## Palatal Palsy in Enteric Fever

Enteric fever still continue to be rampant in our country. Despite the availability of effective antimicrobials, it is still associated with a fairly high incidence of serious complications. Aphasia, acute cerebellar ataxia, perceptive nerve deafness, Guillian Barre syndrome, toxic encephalopathy, transverse myelitis and optic neuritis are known neurological complications of enteric fever(1). Suri *et al.* reported a case of *Salmonella typhi* meningitis with facial nerve palsy which occurred in early part of illness(2). However, isolated palatal palsy is very rare. Kamal *et al.* reported one case of palatal paralysis in enteric fever earlier(3). To the best of our knowledge no other such case has been reported so far. We present a similar case because of its rarity.

A 10-year-old girl was admitted with history of moderate grade continuous fever of 16 days duration. It was also accompanied by nasal intonation of voice and nasal regurgitation of liquid feeds for the last 10 days and constipation for 6 days. The child was treated by a general practitioner with ampicillin and chloramphenicol with no improvement.

On examination, the patient was conscious, well oriented, febrile (103°F) and moderately pale. She had a coated tongue, mild abdominal distension, and the spleen was enlarged 2 cm below the costal margin. The liver was not palpable. The blood pressure and pulse rate was 100/70 mm Hg and 100/min, respectively. Examination of central nervous system was normal except an immobile, low-lying soft palate especially on right half.

Laboratory investigations showed a hemoglobin level of 10 g/dl and a leucocyte count of 3950/cu mm with 40% polymorphonuclear cells, 58% lymphocytes and 2% of eosinophils. The platelet count was 1,75,000/cu mm and the peripheral smear showed normocytic normochromic anemia. The X-ray chest and ECG were normal. Blood culture on the day of admission yielded a growth of *Salmonella typhi* sensitive to ceftriaxone, ciprofloxacin but resistant to ampicillin, chloramphenicol and cotrimoxazole. The Widal test was positive (TO 1:160 and TH 1:120). The CSF examination revealed clear, colorless fluid with 30 lymphocyte/cu mm, sugar 40 mg/dl and protein 30 mg/dl. The child was treated with ciprofloxacin orally (15 mg/kg) from the first day of admission. On the third day of treatment, nasal regurgitation of liquid feeds completely disappeared. She became afebrile on the fourth day of therapy. Nasal intonation of speech persisted at the time of discharge from hospital on the tenth day of admission. She came to the Out-Patient Department for follow up after 3 weeks of discharge. Her voice was absolutely normal. Palatal examination was also normal.

The predilection of typhoid toxin for the central nervous system is well known. The toxicity of the endotoxin appears to reside in the lipid A fraction of the somatic antigen, which is a lipopolysaccharide. Any part of the central nervous system may be affected in enteric fever. However, palatal palsy in enteric fever is rare. In a large study Scragg *et al.* examined 316 African and Indian children of enteric fever but did not encounter a single case of palatal paralysis(4). Usually the neurological complications in enteric fever tend to occur early in the course of the disease(2) which was also seen in the present case. However, in the

case reported by Kamala, *et al.*(3) palatal paralysis was seen on the seventeenth day of illness. The other common causes of palatal paralysis including poliomyelitis and diphtheria were excluded in this case. In view of the emergence of multidrug resistant enteric fever with various complications, we suggest that typhoid fever should be considered in the differential diagnosis of palatal palsy in a febrile child.

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3. Kamala CS, Manimegalai S, Kumar S. Palatal paralysis in enteric fever. *Indian Pediatr* 1991, 28: 1213-1215.
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### **Knowledge, Attitude and Practice of Health Workers in Immunization**

Immunization is an important cost effective strategy for child survival. Health workers are grass root agencies in immunization for rural as well as urban population. Inadequate management of cold chain, incorrect administration and dose may reduce the potency of vaccines and lead to adverse effects also. In order to assess the knowledge, attitude and practice regarding immunization, we interviewed 306 health

workers (260 female and 146 male) of Nagaur district in Rajasthan. Two hundred and four (66.6%) were having secondary, 69 (22.5%) higher secondary and 33 (10.7%) graduation as basic qualification with 18 months pre-job health worker training. Information was sought in the questionnaire about the place of storage of vaccines, method of storing vaccine in the refrigerator, method of carrying vaccines in the field, days of using the same vaccine bulk, what is done with the frozen diphtheria, pertussis, tetanus (DPT) and oral polio vaccine, dose of vaccine, route of administration, and age of vaccination.

In the analysis, persons who answered all the questions correctly were tabulated in the fully correct answer group, who answered correctly for more than two vaccines were tabulated as "partially correct" answer and those who gave wrong or no answer were tabulated as "no knowledge group".