DISEASES OF CHILDREN.

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CHVOSTEK'S SIGN AND ITS SIGNIFICANCE.

In 1876 Chvostek of Vienna described a sign which he believed was characteristic of tetany. This sign, since then called Chvostek's sign, or the facial phenomenon consists in an easily demonstrated mechanical excitability of the peripheral nerves. There has been a considerable diversity of opinion regarding the cause of the twitching, some authorities claiming that it was due to a spinal reflex, while others, chief amongst whom was Escherich (Die Tetanie der Kinder, Vienna, 1909), maintained that it was caused by a heightened irritability of the nerve trunk. At first it was supposed that it was only present in individuals suffering from tetany, and it is universally regarded as one of the three cardinal signs of that disease, the other two being Trousseau's and Erb's symptoms. The sign is so easily elicited and so characteristic that it has been tried for in many varied conditions, exclusive of tetany, and numerous observers have found it present in conditions which seem to have no connection with that disease. Not only is the constancy of the sign questioned, but the degree to which the face twitches has been interpreted as being of varied importance. Schlesinger (Wien. klin. Wochenschr., 1910, p. 315) divides the phenomena into three grades, according as the twitching is confined to the scarlet border of the lip, the side of the nose, or the entire side of the face. The most marked facial twitching is by many conceded to be present in tetany alone. It is only in tetany also that the so called Schultz phenomenon is observed, that is, where there is such increased excitability of the nerve that by merely lightly stroking the skin a distinct facial twitching may be obtained. Loos of Vienna (Wien. klin. Wochenschr., 1911, No. 49) came to the conclusion, after examining a large number of cases, that the sign was present not only in tetany but in many other diseases as well, and that it was frequently found positive in hysterical and nervous children. He describes eighty children with positive facial phenomena but without any other signs of tetany. He concludes that—(1) The positive sign is an expression of general disturbance of nutrition. (2) It may be present in many members of the same family when it is an expression of heightened irritability of the nervous system. (3) It may be present in tetany. Herbst in Berlin in 1910 examined 500 school children, in whom he most often discovered the sign in the fourteenth year. Sperk (Wien klin. Wochenschr., 1910, No. 5) concludes that the isolated facial irritability is rare in infancy, and that it increases rapidly from the fifth to the fourteenth year. He also points out that the sign when
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present in older children occurs in nervous individuals who have increased knee jerks and diminished corneal reflexes. He believes that it is a helpful sign when found in conjunction with others in making a diagnosis of a neuropathic child. Hochsinger (Wien. klin. Wochenschr., 1911), after examining all the children in his private practice for many years for the presence of this symptom, comes to the conclusion that, apart from its significance in tetany, it is a sign of a neuropathic constitution in a child. He found Chvostek’s symptom frequently present in the mothers, less often in the fathers of the children showing it, thus emphasising the hereditary character of nervous signs. Out of 117 children exhibiting signs of nervousness, 101 showed this symptom. Of the mothers of these children 61 showed facial irritability. In boys the sign disappears about the sixteenth year, but in girls it remains to a much later date. The sign may disappear during the summer months and return during the winter.

Bass (Amer. Journ. Med. Sci., July 1912), as the result of an examination of 495 children at the Mount Sinai Hospital for this sign, came to the following conclusions:

1. Chvostek’s sign was present in 3.2 per cent. of the cases attending the institution for treatment.
2. The sign becomes more frequent the older the child, up to 14 years.
3. The presence of so great a number of cases in America, where tetany is relatively an uncommon disease, is an argument in favour of regarding Chvostek’s sign in older children as distinct from any connection with tetany.
4. The positive Chvostek in an older child means as a rule a neuropathic constitution. It seems especially common in children showing vaso-motor irritability.
5. Chvostek’s sign is easily elicited, and should be more often used as an adjuvant in making the diagnosis of neuropathic children.

Clinical Studies on Tetany.

Falta and Kalm (Zeitschr. f. klin. Med., 1911), from a study of twenty-one cases of tetany, have formed the opinion that in the early stage the excitability extends over the whole nervous system. Their observations show that in the gastro-intestinal tract, as well as in other organs supplied by the involuntary nerves, symptoms of increased excitability occur in the acute stage of tetany, as well as other phenomena pointing to tetanic contraction. In some cases a rise of temperature occurs after the injection of substances which usually produce no pyrexia. During the acute stage the authors observed in a large number of cases symptoms of thyroidism developing, and an abnormal excitability of the motor, sensory, and special sense nerves. The following is a summary of the conclusions arrived at:
1. The symptoms of tetany depend chiefly on a condition of excitability of the nervous system.

2. The site of this excitability is the ganglion cell, from which the whole nerve becomes affected.

3. The peripheral nerves are chiefly concerned, but nerves of a higher order can also be implicated.

4. In the acute stage of tetany every kind of nerve can be rendered irritable.

5. The excitability of the involuntary nerves is sometimes a mechanical and sometimes a chemical one.

6. Numerous symptoms of increased excitability are shown in the organs supplied by the involuntary nerves, viz. increased heart's action, spasm of vessels, edema, hypersecretion of sweat, saliva, tears, spastic condition in the stomach, disturbances of temperature, etc.

7. In some cases symptoms of hyperthyroidism occur.

**The Immunity of Infants to Infectious Disease.**

Although the young infant appears to be particularly susceptible to infection through the digestive tract, causing diarrhoea and enteritis; through the respiratory passages, resulting in broncho-pneumonia; and by way of the skin, causing erysipelas and other cutaneous affections, there is an apparent immunity in the infant to the eruptive fevers, measles, scarlatina, chicken-pox, smallpox, typhoid and diphtheria, and to a certain extent to tuberculosis also. If young infants were as subject to those infectious conditions as older children, the mortality amongst them would be much greater, as the resisting power of the infant to serious diseases is less the younger he is.

It is impossible to explain this immunity of the infant, though possibly the exceedingly rapid growth and nutritive changes in the young child give the tissues bactericidal properties against certain infectious germs. Whatever the explanation may be, it is important to bear in mind that this immunity to many infectious conditions does really occur, and that epidemics of the eruptive fevers do not occur in assemblages of young children under a year old. When an epidemic of measles occurs in a crèche it is rare for it to commence among the little babies. It is almost invariably children between one year and four years who are first attacked (*La. Clin. Inf.*, 1911).

**Renal Infantilism.**

Of recent years a good deal of attention has been paid to the subject of infantilism, and the paper under review by Miller and Parsons (*Brit. Journ. Children's Dis.*, July 1912) draws attention to a type of infantilism associated with, and apparently due to, a perversion
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of the renal functions. The authors divide this condition on a pathological basis into two groups:—

Group 1. Renal infantilism associated with organic renal disease (interstitial nephritis).

Group 2. Renal infantilism without organic disease of the kidneys (diabetes insipidus).

The degree of infantilism present is variable. In most of the cases where organic renal disease is present the stature of the child is greatly below the average height of children of corresponding ages. The mental development usually corresponds to the stature rather than to the age of the child. When no organic disease is present in the kidneys the infantilism is of a less severe grade. Genu valgum has been noticed in several cases. It may be regarded as evidence of the imperfect osseous development which obtains in other types of infantilism.

Of more importance are the special characteristics of the renal class of infantilism. The most prominent of these are polydipsia and polyuria. The thirst is severe and may be the cause of the infant coming under observation. The polyuria is sometimes of a very severe type, as in one case where in twenty-four hours a patient passed a weight of urine equal to one-fourth of his body weight. Bed-wetting repeated two or three times nightly is likely to be present. As a result of the polyuria the skin of the patient is very dry and the face characteristically wrinkled. The complexion is of a pale yellow tint, and in some cases marked anaemia is present. In the group without organic renal changes all the symptoms are of a less severe type. The age when the symptoms are first noticed is of considerable interest. In many cases polyuria was noticed at birth, and in these, growth was impaired from infancy onwards; in others the child was stated to be normal for the first few years of life, the thirst, the polyuria, and retarded growth manifesting themselves at the same period of childhood. The urine is much increased in amount, averaging from 50 to 70 ounces per day, and is of a low specific gravity. Cardio-vascular changes are present, consisting of hypertrophy of the left ventricle, heightened blood-pressure, and thickening of the arterial walls. The etiology of the disease is somewhat obscure, although it is generally believed that cases coming under group 1 are due to chronic interstitial nephritis, and that those coming under group 2 are due to congenital syphilis and inherited nervous lesions. Hitherto no case of either type has been materially benefited by treatment.

**Epidemic of Poliomyelitis in Cornwall.**

The epidemic occurred in the little town of Penryn, with a population of 3000 (Birmingham Med. Review, January 1912). The houses are
old and insanitary, the sewage being discharged into the creeks and left exposed at ebb tide. The water supply is also very unsatisfactory. The epidemic consisted of 21 cases—14 males and 7 females—and there were five deaths. All the children who had their limbs affected or permanently impaired were under 8 years old. In all the cases without exception there was severe derangement of the intestinal tract; in some obstinate constipation was present, in others violent diarrhoea accompanied with large foul-smelling stools. Great pain and irritability was complained of when the paralysed limbs were touched or moved. Urticaria occurred in six of the cases. Only one case completely recovered.

The cases are divided into groups—(1) encephaloid type, numbering four cases; (2) gradual ascending or descending type, numbering seven; (3) sudden type, nine cases; (4) transient type, one case. There was one case in January, one in May, six in June, four in July, five in August, and four in September. During the course of the epidemic there were sixteen cases of herpes in the town, a very unusual number, which raised the suggestion that the same organism might be responsible for both diseases.

DISEASES OF THE EAR, NOSE, AND THROAT.

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MENINGITIS: ITS PATHOLOGY AND OPERATIVE TREATMENT.

Kopetzky states (Laryngoscope, June 1912) that "all the symptoms that characterise meningitis are due fundamentally to common factors, whether the invading bacterium is one or another of the various organisms found standing in causal relationship to the lesion—to the poisoning of the central nervous system by the invasion of microbial organisms and the action of enzymatic ferments, plus the products of brain metabolism, which result in an acidosis of the tissues involved, producing an increasing tension of the cerebro-spinal fluid with disturbance of its normal circulation. Finally, relief of the symptoms may be accomplished by relieving the heightened intra-cranial tension and combating the general effects of the action of the poisons on the central nervous system."

The accumulation of cerebro-spinal fluid in meningitis diminishes the available space within the skull, and the symptoms produced correspond with those of cerebral anaemia. Kopetzky conducted experiments on