

TETANY IN THE NEW-BORN

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Although the diagnosis of spasmophilia, or tetany, is often made in new-born infants manifesting muscular twitching or convulsions, it is rarely upheld by estimation of the level of serum calcium. The following case of 'clinical' tetany was instructive in that the child was delivered by Caesarean section before labour had started, thus eliminating possible sources of intra-cranial injury produced during labour, and facilities were present for accurate biochemical analysis of the serum and for the examination of the electrical reactions of the muscles.

Case Record

1ST DAY : The infant, a male, was delivered by Caesarean section. There was no delay in the establishment of respiration. Birth weight 8 lb. 13 oz.

2ND TO 9TH DAY : The child appeared perfectly normal and sucked strongly. Breast feeding was only poorly established, and the feeds were therefore supplemented with a dried milk.

10TH TO 12TH DAY : The baby had several attacks of twitching, a typical attack being as follows : Both hands went into Trousseau's classical position, the metacarpo-phalangeal joints being flexed, fingers extended ; then the wrist flexed ; finally the elbow was flexed in a series of jerky movements. The toes twitched rhythmically, and the lower limbs were flexed in a similar manner. Simultaneously the eye-lids flickered rapidly ; the lower jaw jerked up and down ; and the head jerked in a rotatory manner to the right. During an attack there was no raised intra-cranial tension as judged by the tension of the anterior fontanelle. In the intervals between the attacks, the child took its feeds normally and appeared contented. Clinical examination revealed no abnormality in the respiratory, cardio-vascular, or central nervous systems. No abnormal constituents were found in the urine by the routine laboratory methods. Attacks could be induced by pressure or pinching of upper and lower limbs. A provisional diagnosis of hypo-calcaemia was made, and the following treatment instituted :

1 c.c. calcium gluconate, intra-muscularly twice a day.
Chloral hydrate, 1 grain three times a day by mouth.

14TH TO 16TH DAY : The treatment produced no satisfactory results ; indeed, the attacks became more frequent and severe. The initial phase was as

described above, but in several attacks respiratory spasm gradually appeared, leading to cyanosis. As many as nineteen attacks were recorded in twenty-four hours.

17TH DAY : Blood was obtained by heel puncture and serum calcium estimation estimated. This was done in duplicate and controlled. It showed the serum calcium to be 5.8 mgm. per 100 c.c.

The electrical reactions of the muscles were investigated and found to be as follows :

1. Anodal opening contraction and kathodal opening contraction were greater than both closing contractions.

A.O.C. > K.C.C.

2. When the current was allowed to flow for one or two seconds, the limb under examination went into the typical Trousseau position, but the contraction was limited to the muscle stimulated.

These findings were consistent with a diagnosis of spasmophilia and contrary to upper motor neurone convulsions.

The following treatment was then carried out :

Calcium lactate, 5 grains six times a day by mouth.

Solution of irradiated ergosterol, 4 minims three times a day by mouth.

Chloral, 1 grain four-hourly by mouth.

Intramuscularly, calcium gluconate 5 c.c.

17TH TO 21ST DAY : The fits diminished in number and severity during the next forty-eight hours.

Serum calcium : 7.0 mgm. per 100 c.c.

Serum phosphorus : 5.2 mgm. per 100 c.c.

When no spasms had been noted for forty-eight hours (four days after beginning treatment), the treatment was modified as follows : Intra-muscular injections were discontinued ; the chloral was reduced to eight-hourly doses of 1 grain, and finally discontinued.

24TH DAY : The child's condition remained satisfactory for a further three days, when two mild attacks were observed. The following addition to treatment was then made : parathormone, 4 units subcutaneously daily for two days.

30TH DAY : The dose was then reduced by one unit each day, and finally discontinued. No further attacks were noted, and the child was perfectly well on discharge from hospital.

36TH DAY : The following investigations were carried out prior to discharge : Serum calcium : 10.5 mgm. per 100 c.c. Electrical reactions were normal. No typical spasm was noted when the current was allowed to flow for several seconds.

All treatment was discontinued on discharge with the exception of 1 teaspoonful of cod liver oil emulsion once a day. At the age of three months the child was normal and thriving satisfactorily.

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