CLINICAL DEPARTMENT

INFANTILE SCURVY ASSOCIATED WITH HEREDITARY SYPHILIS

REPORT ON A BREAST FED INFANT WITH MULTIPLE FRACTURES *

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Owing to the prevalence of infantile scurvy and hereditary syphilis, it would seem that the association of these two diseases should not be rare. In view of the scant reference to this possibility in the available literature, it occurred to me that the report of such a case might prove of interest, especially one occurring in a breast fed infant and accompanied by multiple fractures of the long bones of the lower extremities.

REPORT OF CASE

CASE.—Penelope K., a Greek girl, aged 3 months, was admitted to the Pediatric Clinic of the University Hospital, July 1, 1918. Chief complaint, pain on moving the legs.

Family History.—Mother has had three miscarriages, one at the third and two at the seventh month, respectively.

Birth History.—Papular plantopalmar eruption persisting three weeks and then fading.

Feeding History.—Breast fed throughout, with satisfactory gain in weight and unattended by digestive disturbances.

Past Illness.—None.

Present Illness.—Ten days prior to entrance the baby became very restless and screamed with pain whenever its legs were moved or touched. Camphorated oil was applied by the mother without relief. Since the onset of the trouble the baby has not nursed well and has vomited frequently after feedings. There was no history of ecchymoses, hematuria or melena, no fever and no history of an injury.

Physical Examination.—A well developed and well nourished girl baby; lies on its back, with hips flexed and knees abducted; has characteristic snuffles; gums over the upper front teeth are red and swollen; liver palpable 3 cm. below the rib margin; spleen just palpable; upper extremities normal; lower extremities normal as to size and shape, with no visible swellings, but very sensitive to touch and movement. Painful bilateral bony swellings are palpable just above the lower tibial and femoral epiphyses and extending about 5 cm. up the shafts. There is enlargement of all the peripheral lymph nodes, but no ecchymoses or cutaneous eruptions.

Laboratory Findings.—Urine: negative for albumin, sugar, casts and blood. Blood: red blood cells, 4,200,000; white blood cells, 8,300; hemoglobin, 75 per

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cent. (Miescher). Von Pirquet, negative. Wassermann, 4 plus; mother's blood, 4 plus; father's blood, 4 plus. Mother's Milk: fat, 3.9 per cent.; sugar, 6.8 per cent.; protein, 2.1 per cent.

Roentgen-Ray Report.—July 3 (Dr. Van Zwaluwenberg): "Multiple fractures of both tibiae and femurs just proximal to the epiphyses of the lower ends; also a double contouring of both shafts, particularly of the femurs, representing a periosteal irritation. There is a distinct white line at the epiphyseal margin. These latter features point directly to a scorbutus, and we imagine that the fractures are a complicating phenomena."

Management and Progress.—Breast feeding every three hours was followed and orange juice, 1 ounce daily, was given. Because of the slight displacement of the fractures, no surgical treatment was instituted.

After the fourth day there was absolutely no pain on moving the legs. The baby nursed much better, and there was a slight gain in weight.

On the twelfth day the baby seemed perfectly normal except for the fractures, and the snuffles, which persisted. Neosalvarsan and mercury with chalk were given and maintained until discharge.

The roentgen report, August 13, forty-third day, was: "The main difference from the previous plates is in the calcification of the fractures, there being a large callus at each position. Also there is a disappearance of the white line at the epiphyses."

The patient was discharged on the sixty-sixth day (September 4) much improved.

Explanation of the Bone Changes.—The roentgenograms of the bones of the lower extremities reveal three interesting findings: (1) a "white line" at the epiphyseal margins; (2) multiple fractures of both femurs and tibia situated just above the epiphyses; (3) periosteal thickening of the shafts of the bones, especially of the femurs. Several possibilities are to be considered in the diagnosis, namely, syphilis, rickets, osteogenesis imperfecta, scurvy.

Syphilis.—The family history, physical findings—snuffles, palpable liver and spleen, adenitis, positive Wassermann reaction on both child and parents—prove conclusively that syphilis is present. The bone changes seen in syphilitic infants, however, are different from those found here. In syphilis the usual finding is an epiphysitis, which is not present in this case. Fractures do not occur in syphilitic bones, as a rule, except when there are gummas present. As gummas never occur in the bones of hereditary syphilitics, fractures are practically never found. Epiphyseal separation is most often observed. The periostitis of syphilis is usually of the girdle type, encircling the whole shaft of the bone, and usually occurs in several bones. In this case there is no evidence of that type of periostitis.

Rickets.—A "white line" at the epiphysis may suggest rickets. This line is not the smooth, broad line seen in scurvy, but a jagged, irregular line. The epiphysis appeared frayed out. The "white line" does not occur until after the process has healed, and other characteristic bone changes, which are not present in this case, are usually seen.

Osteogenesis Imperfecta.—This condition is suggested because of the multiple fractures. There are no other signs of this rare disease present, however, such as the thinning of the cortex and diminution of calcium in the medulla of the bone.

Scurvy.—This condition will explain all of the bone changes. The smooth “white line” at the epiphysis is regarded by all authorities as diagnostic of scurvy. The “white line” does not occur in hereditary syphilis. Multiple fractures are not a common complication of scurvy, but they do occur. In scurvy the bones are somewhat more fragile

Figure 1

Figure 2

Fig. 1.—Showing white line at epiphyseal margin of tibia and fracture of tibia and fibula with little displacement.

Fig. 2.—Showing white line at the epiphyseal margin and the fracture above the epiphysis on the opposite extremity, with little displacement.

than normal, and fractures might easily occur. The periostitis, characteristic of scurvy, is a localized one, and is not of the girdle type. This is the condition found in this case.

A second roentgenogram, taken six weeks after the first, shows disappearance of the “white line” and good union of the fractures. As the baby had not received its full course of antisiphilitic treatment, but had been on orange juice all this time, it would seem as if anti-scorbutic treatment was responsible for the change at the epiphyses.

Pain on Moving the Legs.—The pain on moving the legs was regarded as partly due to scurvy and partly to the fractures. A few days after receiving orange juice there was absolutely no pain on motion, and the baby moved her limbs spontaneously. As the fractures were of a type in which there was very little displacement, they prob-

ably would not have caused such excruciating pain as was noticed on admission. Coincidentally with the disappearance of the pain, there was noticed a clearing up of the gums.

CONCLUSION

It would seem that we are justified in concluding that both syphilis and scurvy are present in this case: syphilis on the grounds of the history, physical findings and Wassermann reactions; scurvy on the grounds of characteristic bone pathology, changes in the gums and striking response to the administration of orange juice.