noticed about two years previously, but had remained symptomless until the last six months. Examination revealed unusually prominent swellings over the fifth metatarsophalangeal joints, with the little toe directed inwards, following the axial deviation of the outer three digits. Radiographs show a varus position of the little toe, adaptive changes in the basal phalangeal and metatarsal epiphyses, and outward splaying of the fifth metatarsal. Clinically and radiologically the condition therefore resembles metatarsus primus varus.

Aetiology

In considering the cause of this condition we must refer to the embryology of the foot. The mesodermal concentrations destined to be the metatarsals are laid down radially, diverging towards the convex border of the limb bud. This fanwise arrangement persists up to about

the 20-mm. stage. At this time we see the differentiation and development of the transverse metatarsal ligament, and this restraining rein thrown across the heads of the developing metatarsals appears to exert a converging influence. Development proceeds with the metatarsals assuming the more parallel positions they occupy in the adult. Imperfect attachment of the transverse metatarsal ligament to the fifth metatarsal could allow primitive divergence to persist, which I would suggest is the primary error in this condition.

In the early stages the developing digits radiate from the convex border of the limb bud, following the lines of the diverging metatarsals, and their realignment to the adult position is difficult to explain. It would appear, however, that two factors are at work: (1) the inherent human pattern responsible for the blue-print of our shape and size, and (2) mechanical forces.

In considering these mechanical forces we see that the changing shape of the developing foot plays an important part. The convex border of the embryonic foot presents at first a large arc of a small circle. As development proceeds this arc expands, gradually transforming itself into a wider arc of a larger circle, with predominant expansion of the pre-axial side. This expansion of the arc brings the radiating toes into more parallel positions. Coinciding with this, the developing intrinsic and extrinsic muscles begin to exert their influence. The flexor longus digitorum, pulling from the inner margin of the foot, has an adducting effect upon the third, fourth, and fifth toes. This pull is

exerted mainly upon the terminal phalanges. The toes are pulled into their parallel positions, but in many individuals this pull continues beyond the normal, and the terminal phalanges are adducted and flexed. The intrinsic muscles, especially the pedal interossei, should prevent this, as one of their little-appreciated functions is to extend the two terminal phalanges. There thus develops a minor tug-of-war between the strong adduction flexing action of the long flexor and the relatively weak degenerating interossei. Now if the primitive divergence of the fifth metatarsal persists the obliquity of the flexor pull is increased and the whole fifth digit becomes adducted.

Treatment.—Rarely do these cases require active treatment other than the provision of well-fitting shoes. Bunionectomy or trimming of the lateral surface of the metatarsal head may be necessary in pronounced cases with clinical symptoms. If the primary factor is the abduction of the metatarsal shaft, osteotomy should theoretically be the treatment of choice, but in practice, as for metatarsus primus varus, this procedure is both unnecessary and often unsatisfactory.

Summary

Unusual prominence at the fifth metatarsophalangeal joint is either a primary or a secondary deformity. If it occurs as an independent condition it constitutes a syndrome, which should be described as metatarsus quintus valgus. The underlying basic congenital error is the persistence of the embryonic splaying of the fifth metatarsal, probably due to incomplete or imperfect development of the transverse metatarsal ligament.

Medical Memoranda

Sprue-like Mouth and Swelling of Lips as a Manifestation of Streptomycin Sensitivity

Many toxic manifestations of streptomycin have been described, but the following experience seems to add one more to the list of "dangers."

CASE HISTORY

A man aged 57, a wine merchant of moderate habits, was recently seen by me for chronic pulmonary tuberculosis. There was infiltration of both lungs, with cavitation on the right, and it appeared from the history and from his subsequent response to conservative treatment that he was going downhill. It was therefore decided to try streptomycin. The streptomycin used was streptomycin calcium chloride complex, and the amount given was 1 g. daily in two doses. One month later the E.S.R. still remained high (95 mm. in one hour), but there was considerable subjective improvement. He, however, complained of some temporary giddiness following injections which did not amount to vertigo.

Five weeks after the beginning of treatment he complained of slight weakness of the legs, particularly noticeable on climbing stairs, and on the same day there was a feeling of numbness of the lips with a slight swelling of the mucous membranes. Within two days the patient complained of a feeling of thickness of the tongue, which subsequently became furred and after a few days ulcerated; at the same time there was some superficial ulceration of the inner aspects of the cheeks, the whole picture resembling severe sprue except that the lips were swollen.

Professor G. Ransome saw him at this stage and suggested that a vitamin-B deficiency factor might be contributory. Sensitivity was suspected in view of the lip-swelling. The streptomycin was stopped and the patient was given daily five 4-ml. injections of "plexan" and an adequate dosage of vitamin-B complex. The condition slowly subsided over a period of three weeks, during which time he experienced considerable pain.

Three weeks after stopping streptomycin it was decided to try a test dose to establish whether or not this was indeed a manifestation of streptomycin sensitivity. Three hours after injection of 0.5 g. the lips and tongue swelled, the pulse rate increased, and the patient felt warm all over and itchy. There was a migraine-like headache. Two mg. of adrenaline in oil was given and 50 mg. "benadryl" thrice daily, this being continued for a few days. The immediate distress was relieved within a few hours, but the swelling of the lips and

tongue remained for a week. The dorsum of the tongue again ulcerated and took a further fortnight to heal.

It seems clear, therefore, in view of the fact that fungous and bacillary infections were ruled out, that this was a surface necrosis of the mucous membrane of the tongue, cheek, and lips directly due to streptomycin.

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Death from Lightning-stroke, with Multiple Injuries

Textbooks of forensic medicine are unanimous in stating that lightning-stroke may be accompanied by signs suggestive of great mechanical violence, but in actual practice gross injuries other than burns seem to be comparatively uncommon. Peterson, Haines, and Webster (1923) state that Schneider was among the first to record the fact that bones may be broken and blood vessels ruptured; while Rhodes, Gordon, and Turner (1945) say that the lesions vary in extent and nature and usually

take the forms of burns of different degree, but that deep-tissue destruction with fractures of the bone occurs in certain cases.

Dixon Mann (1922) quotes a case in which there was a compound fracture of the right tibia and a comminuted fracture of the os calcis; there were also extensive burns. He goes on to say that fractures of the bones, including those of the skull, have occurred, but only exceptionally. Lyon (1935), quoting Tidy, states that fractures are rare but have been found in a few cases. Glaister (1945) describes a case of fractured base and in another a compound fracture of the tibia.

Taylor (1948), Sydney Smith (1940), Keith Simpson (1947), and other authorities make similar statements, but I have not been able to find a published case exhibiting the degree of injury shown in the accompanying photograph.

CASE HISTORY

On March 22, 1948, at half-past six in the morning, there was a sudden sharp thunderstorm accompanied by heavy rain. As is common in this part of the world, the electrical manifestations of the storm may be limited to one or two vivid flashes accompanied by heavy crashes of thunder, and in this particular instance the only significant flash was responsible for this one fatality.

I accompanied the police officer to a small native hut in which the occupant had been killed. The hut, consisting of a single room, was constructed of sticks and mud with a low thatched roof. The walls and thatch were dilapidated, but there was little evidence of recent damage. About 9 in. (22.8 cm.) from the rear wall there was a coconut tree, which showed signs of the effects of recent lightning. The top was damaged and at intervals down the trunk the bark had

been torn off. In fact, the tree-trunk had the appearance of having been clawed by a giant animal.

There had been two occupants of the hut—the dead man and his elder brother, the latter sleeping in a bed and the former on a rush mat adjacent to the wall nearest to the coconut tree, and within a foot of the bed. There was no direct evidence about the patient's position at the time of the fatal flash. The surviving occupant stated that his brother left the hut at daybreak to go to the latrine and returned about two minutes before the flash. The survivor was practically unhurt, but was somewhat dazed and unable to give any account of the accident. He was unaware whether his brother had been standing, sitting, or lying down at the actual moment.

The body was found lying at full length on the remains of the sleeping-mat with the head resting on a folded fez cap. The mat itself appeared to have been blown to pieces: some fragments were found adhering to the under surface of the thatched roof. The body was naked, and it is of some interest to know that it was occupying exactly the same position and adopting the same attitude as would have been the case had death occurred in sleep and if the shock had not disturbed the body to the slightest degree. The surviving brother and other villagers were quite definite that no one had touched the body after death. This is probably true because, besides the native's reluctance to touch a body slain in this manner, he would never

consider the corpse's comfort to the extent of folding a cap and placing it beneath the head. It is suggested, therefore, that all the injuries were due solely to the blasting action of the lightning, and it would seem that the man, having returned to his hut, had lain down on his mat again and made himself comfortable pending the ending of the storm.

The injuries are well illustrated in the photograph. On the left side of the neck all the soft tissues between the trachea and cervical vertebrae had been blown out, leaving a gap in which a closed fist could be placed. The wound on the left shoulder involved the whole of the deltoid region and showed a double fracture of the humerus, one at the neck of the bone and the other 4 in. (10 cm.) lower down the shaft. The separated portion of bone was lying free in the wound completely denuded of muscle. There were scattered superficial wounds and abrasions of the face and chest, and the right side of the abdomen was slate-grey in colour, the skin being dry and parchment-like. No actual burning or singeing could be seen. Superficial wounds in the pubic region involved the penis and scrotum, and

on the inner sides of both thighs deep lacerated wounds extended from the groins to within 2 in. (5 cm.) of the knees. There was a lacerated wound of the right big toe, with smaller wounds on the dorsum of the foot.

The scalp was uninjured, but a fracture of the left side of the frontal bone proceeded outwards and downwards to the base and a fracture of the right parietal bone passed backwards over the occipital bone to the foramen magnum. The base of the skull was shattered by multiple fractures, with displacement of the fragments. The brain showed no macroscopic signs of injury.

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The Ministry of Health and the motor industry have agreed on a scheme for speeding delivery of cars urgently required by domiciliary midwives. A midwife who already has a car must produce evidence that it is not reliable. Local supervising authorities will certify the urgent need for a car. Similar certificates must be obtained from nursing associations or hospitals who have ordered cars for domiciliary midwives. The scheme does not apply to home nurses who do not undertake midwifery or to health visitors.