CHAPTER X.

STATISTICS AFTER OSTEOTOMIES.

My experience in osteotomy and osteoclasis, although not as extensive as that of some European surgeons, yet has been considerable. For the purposes of statistics I have divided all osteotomies into two classes, linear and cuneiform. In my judgment, the bone on which the operation is performed has no influence on the result except that the more superficial the bone the greater is the liability for suppuration to follow, for the reason that there is greater danger of the lips of the wound being separated by extravasation of blood if adequate drainage has not been provided. I have performed seventy-four linear and seventeen cuneiform osteotomies. All the patients on whom these operations were performed recovered with the deformity corrected, except two cases of genu valgum, on which a Reeves's operation was done and in which the condyle could not be detached on account of the relaxed condition of the external lateral ligament.

The following are the cases in which suppuration occurred:

In the first case of linear osteotomy for bow-legs considerable and troublesome suppuration took place

in both limbs, and from the left a small shell of bone was detached from the lower end of the upper fragment. During the operation the anterior tibial artery was divided by the osteotome, which was allowed to project outward beyond the line of the crest of the tibia. I think, moreover, that the operation was not performed properly, and that my osteotomes were too thick; there was not sufficient drainage. In the second, suppuration occurred in one limb, but to a slight degree. The wound was not closed properly, and the compress irritated the tissues of the leg. In the fourth case there was a trace of pus for a day or two, and in one patient a small slough formed under a compress. In the third case of genu valgum after a Macewen's supra-condyloid operation there was a little suppuration in one limb for a few days. In the fifth case there was found, upon the fifteenth day after the operation, a collection of pus extending from the wound up as far as the upper third of the thigh. It was situated between the muscles and the skin, and did not communicate with the bone, as stated on page 114. On removing the small piece of gauze covering the wound, a free discharge of pus took place and emptied the abscess-cavity. The compress was glued to the skin immediately around the wound by blood, and formed a portion of the outer wall of the abscess-cavity. I think that the abscess had its origin in a small piece of adipose or cellular tissue protruding from the lips of the wound; this was irritated by the gauze, and a small quantity of pus formed; it could not escape on account of the firm adhesion of the compress to the skin, and the dried blood on the gauze rendered it stiff and hard. It

forced the lips of the wound apart and, as its quantity increased, the matter burrowed backward and upward. The application of a compress was soon followed by a cure. The temperature in this case did not rise above the normal until the day on which the abscess was discovered, and then only reached 100°. In the ninth case a small collection of pus was found some days after the operation; it gave no trouble, and did not retard convalescence. The cause of the abscess may have been an improper handling of the limb.

In the twelfth case quite an extensive collection of pus occurred in the left limb, for which no cause can be assigned; it did not communicate with the bone, and was easily controlled.

I have therefore had eight cases of suppuration in seventy-four linear osteotomies.

CUNEIFORM SECTIONS.

In the first six limbs operated upon, suppuration took place in all to a considerable extent, necessitating frequent dressings. The cause of this, I am satisfied, was an improper management of the wounds. The pus in all these cases was in contact with the bone. In three limbs there was a slight necrosis, but all eventually made a good recovery, with the deformity corrected.

Since I have managed the wound differently there has been no complication, except in one case at present under treatment. It occurred in a boy, eight years of age, with a marked anterior curvature of both tibiæ, and on whom I performed a cuneiform osteotomy on both limbs.

For the first two days he was continually in motion, twisting his limbs in every direction, and which it was impossible to control. On the third day both legs were greatly swollen, and suppuration followed, necessitating frequent dressings. At the present time (four weeks after the operation) he is doing well. I think that in this case suppuration was due to motion between the fragments of the bone.

I have lost two patients after an osteotomy, one dying from diphtheria, the other from meningitis. At the time of death firm union existed at the point of operation. The fatal issue in these cases was in no way traceable to the operation. I have performed osteoclasis upon thirty-four limbs for the correction of lateral curvature of the tibia. In all recovery took place without any complication, the deformity being relieved.

I have been able to collect the result in fifteen hundred and ten (1,510) cases of osteotomy for the correction of deformities at the hip joint, for genu valgum and tibial curvature. Section for deformities of the knee joint and operations for vicious union after fractures are not included, for the reason that these sections do not strictly belong to the class of deformities considered in this volume. The labor necessary to collect such statistics, to be of any value, would trespass too much on my time, and would delay the appearance of this volume, which has already taken a much longer time than I had anticipated in its preparation. Of the total number of osteotomies, fourteen hundred and forty-eight (1,448) were linear and sixty-two (62) cuneiform. Of the former, fifteen, (15) died, in ninety-two (92) suppuration is reported

to have occurred, and in seventeen (17) there was some necrosis—a mortality of ·010 per cent.

Of cuneiform osteotomies, in seventeen suppuration is reported, and five died—a mortality of ·96 per cent.

Taking the whole number of operations, there was a mortality of ·0132 per cent. There have, no doubt, been other fatal cases, but no record has been made of the fact, nor do these figures probably give a fair representation of the number of operations that have been performed.

Deformities of other bones have been corrected by an osteotomy, but the number of the operations are few. Muralt[1] and Schoepff[2] have divided the humerus for the correction of deformity of this bone after fracture. Walton[3] operated upon two cases of ankylosis of the elbow joint in a straight line by dividing the humerus. Barwell[4] mentions another case. Mears[5] made a section of the humerus near the joint in a case of old dislocation. Gardeil and Guterbock,[6] and Hill[7] have divided the radius for vicious union after fracture. In all of these cases a good result was obtained.

Taking into consideration the many accidents, the want of experience as to the class of cases suitable for an osteotomy, the faulty methods in operating, and wound management, the results have been excellent. If the earlier operations were left out, the mortality would be reduced to almost zero.

[1] "Campenon," *loc. cit.* [2] "Campenon," *loc. cit.*
[3] "Lancet," April 3, 1880, p. 226.
[4] "Treatise on Disease of Joints," 2d ed., p. 565.
[5] "Trans. Am. Surg. Assoc.," vol. i, 1881–'83, p. 115.
[6] "Campenon," *loc. cit.*. [7] "Lancet," 1872, vol. ii, p. 153.

BIBLIOGRAPHY.

GENU VALGUM.

Albert, E. Wiener Med. Presse, 1875, page 368, 415, and 473.
Alexander. Liverpool Med. Chir. Jour., 1881, page 191.
Annandale. Edinb. Med. Jour., July, 1875, page 18.
Arnison. Med. Press and Circ., 1882, N. S., vol. xxxiv, page 350.
Baker. Brit. Med. Jour., Nov. 16, 1878, page 727.
Baker, A. E. A Clin. Lect. on Genu Valgum. Brit. Med. Jour., July 5, 1879, page 1.
Bande, E. Du genu valgum. Thesis Lille, 1880, No. 20.
Barwell, R. Brit. Med. Jour., Oct. 18, 1879, page 607.
——— Brit. Med. Jour., 1878, vol. i, page 747.
Beauer. Orthopædic Surgery, 1868, page 192.
Bradley, S. M. Med. Press and Circ., 1878, vol. xxvi, page 428.
——— Brit. Med. Jour., Sept. 7, 1878, page 368.
Broadhurst, B. E. Lancet, Dec. 13, 1880, page 770.
——— Brit. Med. Jour., Oct. 18, 1879, page 609.
——— Brit. Med. Jour., June 14, 1879, page 897.
Bœckel, J. Nouveaux faits d'osteotomie. Rev. de chirg., June, 1882, pages 463 and 470.
Bœckel, J. Genou valgus : osteotomie cuneiform du tibia. Gaz. méd. de Strasb., 1884, 4 s., vol. xiii, page 3.
——— Bull. gén. de thérap., 1880, vol. xcix, page 117.
Bœckel, M. E. Gaz. hebd. de Paris, 1882, 2 s., vol. xix, page 559.
Bradford, E. H. Bost. Med. and Surg. Jour., Oct. 7, 1880, page 349 ; 1882, vol. cvii, page 611.
——— N. Y. Med. Jour., Jan., 1881, page 25.
Bull, W. T. N. Y. Med. Jour., Jan. 26, 1884, page 102.