PROCEEDINGS OF THE NORTHERN ORTHOPEDIC ASSOCIATION AT ITS XII MEETING IN COPENHAGEN, DENMARK, 16th—17th JUNE, 1930

EDITED BY
P. G. K. BENTZON, M. D.,
Copenhagen.

The meeting was opened by the chairman, *P. G. K. Bentzon,* M. D., Copenhagen.

Previous to the commencement of the transactions, *Giertsen,* Oslo delivered a speech to the Memory of Dr. *Chr. M. F. Sinding-Larsen, Oslo,* who died on February 12 in 1930. The obituary notice has been printed in the first issue of this journal.

V. BÜLOW-HANSEN, OSLO:

RADICAL OPERATION FOR HAMMER-TOE WITH PAINFUL TOE-BALL

When to-day I am to discuss such an apparently insignificant subject as given in the title, it is because there are so many people around us to whom every step means a pain. And this trouble does not subside as the years go by, all expert and energetic treatment notwithstanding. In addition to the deformity there develop, especially in elderly individuals, clavus and thickened tender pads.

Even early in my orthopedic training did these lesions interest me very much. This interest was further accentuated by observations of the results from the treatment which at that time was the usual measure employed by the surgeons in my country. As a rule, the operation would consist in amputation or exarticulation of one or several toes. Sometimes this treatment would give relief, but not always. Thus, from my first

years as a physician, I remember a young woman — a passionate tourist and alpinist — on whom one of our greatest surgeons exarticulated the great toe for a marked degree of hallux valgus and a troublesome ball. Although some of her troubles were done away with in this manner, she had, on the other hand, lost a good deal of the support of the medial edge of the foot, and there had developed a plano-valgus deformity which was most inconvenient in her climbing and daily walk. I then suggested that the great toe might be replaced by transplantation of the second toe. This was done, with conservation of the flexor tendons as well as the extensor tendons. The result was a good foot, and she was able to take up again walking tours in the summer.

It would take us too far here to enter into the etiology of hammer-toes and their associated malposition of the metatarsophalangeal joints with tender toe-balls; and besides it would not be required in this assembly.

The etiology of these lesions has been thoroughly dealt with in that chapter of »Lærebog i Kirurgi« (*Nicolaysen, Petreu & Rovsing*), which the late Professor *Sloman* wrote on deformities of the foot. Clear and thorough information in this respect is also given in Professor *Haglund*'s »Die Prinzipien der Orthopädie«. From this great work I shall quote: »Mit dem Herabsinken und Auseinanderspreizen der vorderen Metatarsalregion, folgen — unterstützt von vestimentären ursächlichen Momenten — Kontrakturen in den Zehen, Hammerzehen, digitus malleus-Bildung mit erhöhten Beschwerden infolge der Clavusbildung. Viele Patientinnen verfallen infolge dieser Fuss- und Zehendeformitäten, denen nur durch eine Änderung der fehlerhaften zu einer besseren Belastung vorgebaut werden kann, einer Invalidität mit unerhörten Leiden.«

I shall confine myself to this quotation, recommending the entire chapter with respect to the etiology as well as to the symptomatology and therapy. In »Handbuch der orthopädischen Chirurgie« edited by Professor *Joachimthal* (1905—7), the editor writes himself the chapter on deformities of the foot and pains of the sole; and to this paper I shall also refer the stu-

dent. Besides, there is a large literature on these lesions, and one may mention authors as *Francke, Morton, Péraire* et *Malby, Pochhammer, Vincent* etc.

Hammer-toe — digitus malleus — may be due to a variety of causes: central, medullary or peripheral, paralytic or spastic. It is often associated with deformity of the foot — as valgus, planus, equinus, and excavatus.

The hammer-toe deformity with pains in the foot, tenderness of the toe-ball and sole, and clavus on the dorsal surface of the toe — this is the lesion I am to talk about to-day. This is the lesion I have gradually got accustomed to treat more and more radically. In this lesion the affected toes are fixed in dorsal flexion in the metatarsophalangeal joint and plantar flexion in the 1' interphalangeal joint. In the metatarsophalangeal joint the malposition may be so marked as to approach a dorsal subluxation. Clavus and tenderness on the dorsal surface are adding to the discomfort. So does the thickened horny skin on the plantar surface together with one or several corns on the pads; in addition there is often some bursitis and tendovaginitis.

Like others, I have previously performed an open plastic operation on the extensor digitorum longus after *Bayer*'s method and tenotomy of the flexor tendons, occasionally together with resection of capitulum phalangis I. As you know, this treatment will often give a good result. But, in many cases, the trouble will still persist, and then the discomfort is especially due to the tender pads of the sole. In the later years I have therefore gone over to a more radical treatment in one operation, and I have never regretted this change of method.

Briefly, the operation consists in resection of all troublesome metatarsal capitula together with extirpation of any tendovaginitis present and of hyperplastic fatty tissue — all through a plantar incision near the toes. Thus, the scar will not fall in the treading surface. In the earliest cases of this operation, I was a little afraid of impairing the serviceability of the foot, especially of injuring the arch of the foot. But these cases were extremely bad, the patients being practically completely in-

capable of work, in spite of treatment for years by the very best of surgeons; a few of these patients had even been pronounced intractable.

As it turned out that not only did the condition of these patients improve, but they were even fully capable of working once more and perfectly free of pains, I have made this method my operation of choice in these lesions.

After this operation, the foot looks nicer, and its arch is preserved. If hallux valgus is present, it is corrected, and the troublesome sesamoid bone is removed. The method is not a new one, I know, in so far as *Morton, Graham, Péraire & Mally,* and *Francke* have recommended resection of the 3' and 4' metatarsophalangeal joints, or, in *Morton*'s metatarsalgia, merely resection of the caput metatarsi (described as early as 1876). I have merely wanted to call attention to the fact that in a number of cases I have had some very satisfactory results from this radical treatment. In the past 2 years I have treated 8 cases of this kind; and I beg to show you their records, photographs and X-ray plates. I wish to add that out of regard to the position of the foot and its arch I have for the sake of safety always given the patient Nyrop shoes or boots with plates fitting the instep.

(Demonstration of X-ray plates and other photos of 8 patients before and after operation. The age of these patients was between 27 and 50 years; there were 5 women and 3 men. Some of these patients had previously submitted to special treatment, without any result.)