

## TRANSPOSITION OF THE TRACTUS ILIO-TIBIALIS TO THE PATELLA

*As a Treatment of Quadriceps Paralysis and Certain Deformities  
of the Lower Extremity After Poliomyelitis*

By

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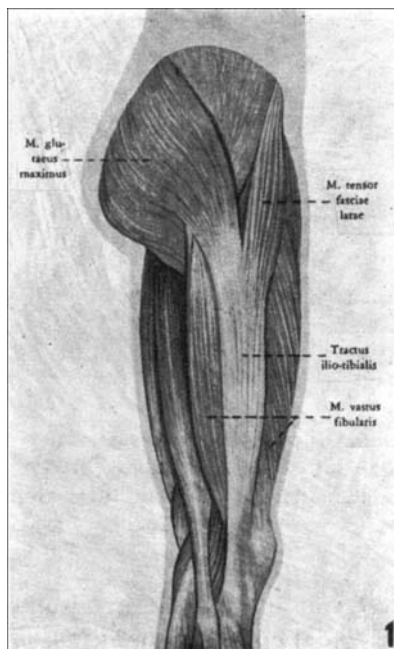
The purpose of this paper is to present the results obtained in the Orthopaedic Hospital of the Invalid Foundation, Helsingfors, during 1943–1959 in the treatment of paralysis of the quadriceps muscle and certain deformities of the lower extremity after poliomyelitis. The treatment is reviewed on the basis of 63 cases in which transposition of the tractus ilio-tibialis to the patella has been performed. The conclusions drawn from these results have pointed the way to our present form of treatment (*cf. Hagelstam in (7)*).

In 1925 *Spitzzy* suggested transposition of the iliotibial tract to the patella as a treatment for quadriceps paralysis following poliomyelitis (12, 13). His proposal was based on the fact that the tractus with the tensor fasciae muscle extends over two joints, being situated anteriorly of the axis of movement of the hip and posterolaterally of the axis of the knee-joint. When the hip-joint is extended, the tractus with its tensor muscle thus stretches and stabilizes the knee. He also pointed out, as did *Erlacher* (5), that the tensor fasciae latae muscle often escapes paralysis even when the flexors of the thigh are affected. In 1933, *Ober* pointed out the risk of recurvatum following transposition of the hamstring muscles and suggested that the tensor fasciae latae and sartorius be employed instead (10). In 1926, *Yount* gave indications for transposition of the tractus ilio-tibialis (15) and, in 1938, presented his series of 16 cases in which good results had been obtained (16). In

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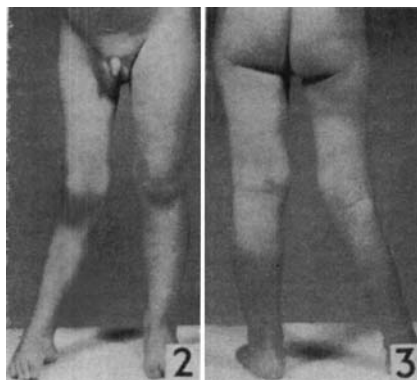
*Fig. 1.*

The tractus ilio-tibialis sets out from the muscular fibres of the tensor fasciae latae muscle and the gluteus maximus, being attached distally at the lateral condyle of the tibia.

one half of these, the biceps femoris had been used in combination with the tractus. Apart from reports on isolated cases (1, 14), no other series with transposition of the tractus ilio-tibialis as the sole treatment of quadriceps paralysis has been published. In 1940, *Debrunner* suggested that the tractus and sartorius should be used simultaneously for transposition in quadriceps paralysis, stating moreover that it is not important to achieve a marked increase of the extension power of the knee-joint, since the patient does not necessarily require it when moving (4). He pointed out that the muscular power needed for transfer of the stabilizing power of the knee-joint to the ligaments is small.

#### ANATOMICAL CONSIDERATIONS

The tractus ilio-tibialis is composed partly of longitudinal and partly of transverse bands. It sets out from the muscle fibers of the musculus tensor fasciae latae and gluteus maximus, being inserted distally at the lateral condyle of the tibia (Fig. 1). Part of the tractus reaches the



*Figs. 2 and 3.*

Case 24.—*Typical deformity* of the right lower extremity due to contracture of the tractus ilio-tibialis in the late stage of poliomyelitis 3 years after onset of the illness. Note the genu valgum, external rotation of the tibia and flexion contracture of the hip.

tibial tuberosity distally of the patella and isolated strands extend to the fibula. One of its functions in a sound leg is to contribute to the locking of the knee-joint in the last stage of extension by external rotation of the tibia.

Because of its site and construction, contracture of the tractus ilio-tibialis is probably one of the most important factors responsible for deformities of the lower extremities after poliomyelitis (Figs. 2 and 3). Therefore *Irwing* (1949, 9) and *Hodgkinson* (1957, 8) recommended Yount's fasciotomy for the treatment of these deformities. In this operation the functional muscle is not utilized, whereas by transposition of the tractus to the patella both correction of the deformity and improvement of the function of the knee-joint may be achieved.

#### MATERIAL

The present series is made up of 63 cases, 37 male and 26 female.

As to the age at onset of the illness, the largest group (26 cases) is made up of the youngest patients with ages ranging from six months to 3 years. The explanation for this may be that the pareses are milder among the youngest patients.

The interval between paralysis and surgery was less than 5 years in about half of the cases. During this period a deformity had already developed in the paretic extremity owing to contracture of the tractus

ilio-tibialis and the musculus tensor fasciae latae. Surgical measures were not carried out until two years after the patient contracted the disease and during this time there was both spontaneous improvement of the muscular function and an increase of muscular power achieved by means of physiotherapy.

The patients ranged in age from 3 to 49 years at the time of operation; 35 patients were under 15 and 28 were over 15.

TABLE 1

*Transposition of the tractus ilio-tibialis to the patella. Follow-up cases from 1943-1959 in the Orthopaedic Hospital of the Invalid Foundation.*

	No. of cases
Male .....	37
Female .....	26
Total .....	63
Unilateral .....	59
Bilateral .....	2

TABLE 2

*Distribution by age at acute stage of poliomyelitis.*

Years	No. of cases
½- 3	26
4- 5	9
6- 7	2
8- 9	4
10-11	3
12-13	3
14-15	4
16-17	3
18-19	1
20-21	2
22	1
29	2
33	1
40	1
47	1
Total	63

TABLE 3  
*Time elapsed from paralysis to surgery.*

Years	No. of cases
2- 3	24
4- 5	11
6- 7	7
8- 9	7
10-11	4
12-13	2
14-15	2
20-21	2
25	1
32	1
41	2
Total	63

TABLE 4  
*Time from operation to last follow-up examination.*

Years	No. of cases
6/12-11/12	14
1- 2	12
3- 4	2
5- 6	3
7- 8	3
9-10	4
11-12	19
13	6
Total	63
Mean duration of follow-up period	6.8 years

The average follow-up period was about 7 years; it was 11 to 12 years in the largest group (19 cases) of patients subjected to follow-up examination. At the end of the follow-up period, 39 patients were over 15 years old and thus their growth was practically complete, while 24 patients were under 15 years of age.

#### INDICATIONS FOR SURGERY

Indications for operation were in 28 cases paralysis of the quadriceps muscle with consequent limping and loss of stability of the knee-joint

causing knee buckling and falling, or hand-to-knee walking without fixed deformities. In 27 cases fixed deformities of the lower extremities following contracture of the tractus ilio-tibialis with its allied structures (genu valgum, knee-flexion deformity and external rotation of the tibia, flexion and abduction contractures of the hip) were recorded as indications together with other factors. In 19 cases it was thought that operation might enable the patient to discard his braces and/or crutches, or that long braces comprising the entire leg could be exchanged for smaller ones for the ankle and foot.

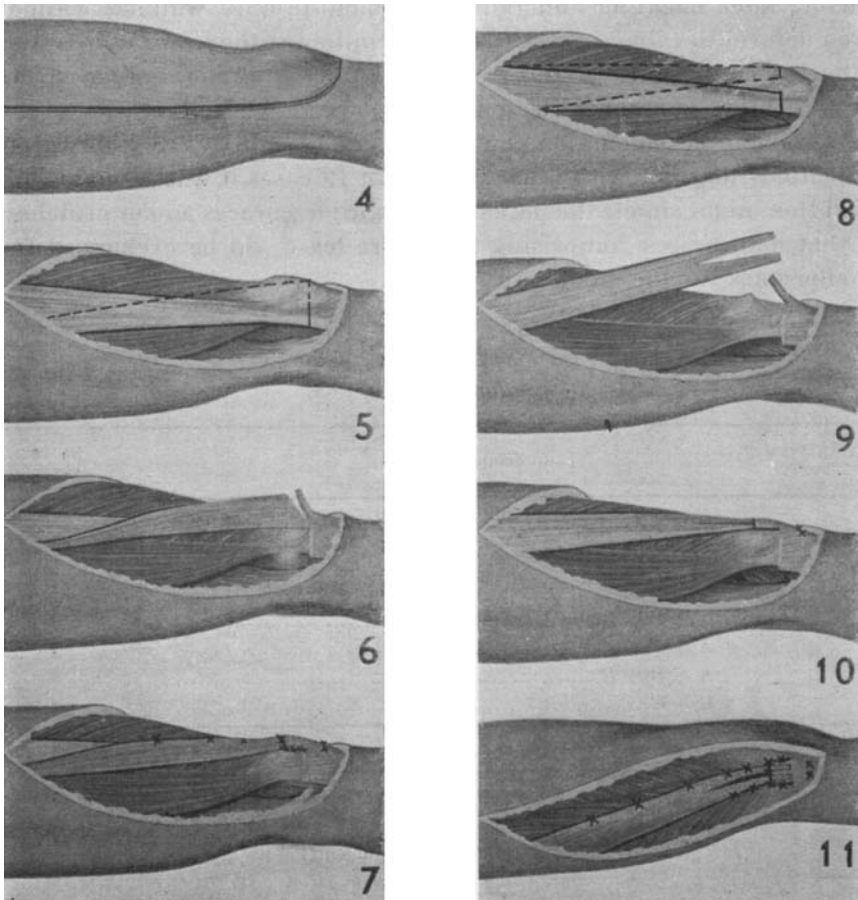
TABLE 5  
*Indications for operation.*

Indication		No. of cases
A	Quadriceps paralysis with limp and loss of stability	28
B	Fixed deformities .....	2
C	Brace and/or crutches .....	3
	A + B .....	14
	A + C .....	5
	A + B + C .....	9
	B + C .....	2
Total .....		63

#### OPERATIVE TECHNIQUE

The skin incision was made laterally from below the trochanteric region, extending in a curve to a point distal to the patella. In 43 cases the tractus ilio-tibialis was detached laterally in its axial direction, and severed from its insertion at the lateral condyle of the tibia, after which the tractus was rotated 180 degrees on its axis and fastened with silk or supramid sutures to a bony pocket made for this purpose in the patella and with some further sutures to the quadriceps tendon. The flap of tendon and periosteum formed when the bony pocket was cut out was sutured over this site of attachment (Figs. 4-7).

In the other 20 cases the tractus was entirely detached, that is laterally as well as ventrally in its axial direction and from its attachment. It was transposed in its plane and fastened, with its end either split or intact, to a similar bony pocket made in the patella with perforating supramid or silk sutures which passed through the ligamen-



*Figs. 4-7.*

The tractus ilio-tibialis has been *transposed by rotation* and fastened to the patella. Fig. 4: the skin incision has been made laterally, extending in a curve distally of the patella. Fig. 5: the tractus ilio-tibialis has been detached laterally and distally. Fig. 6: the tractus is rotated 180 degrees around its longitudinal axis. Fig. 7: the tractus has been fastened to the patella.

*Figs. 8-11.*

The tractus ilio-tibialis has been *transposed in the same plane* and, with its end split, fastened to the patella. Fig. 8: the tractus has been entirely detached, laterally as well as ventrally in its axial direction and also from its attachment. Fig. 9: the detached end portion of the tractus has been split. Figs. 10 and 11: with supramid sutures which perforate the ligamentum patellae the ends of the tractus are fastened into a bony pocket made in the patella.

tum patellae. The flap of tendon and periosteum was sutured over the site of attachment (Figs. 7-11).

Sufficient attention must be paid to adequate dissection of the tractus, which should comprise fibres setting out both from the musculus tensor fasciae latae and from the gluteus maximus. The tractus should not be divided above its site of attachment but at its insertion to ensure that its length is adequate for transposition and thus to prevent tension. The fascia intermusculare was severed. A subperiosteal attachment to the patella is not considered a sufficient measure but the tractus is fastened to a bony pocket made in the patella. A superficially fastened tractus may easily become loosened at a later stage, *e.g.* in connection with a small injury or stumbling.

In the present series, the cases operated on according to the first operative technique described above have been followed up for a longer period, the latter operative method having been more generally employed in recent years. Transposition of the tractus by rotation is a comparatively simple measure, whereas transposition in the same plane is more complicated. The former method leads to a cosmetically more satisfactory result, while a tractus ilio-tibialis transposed in the same plane may form a fold on the anterior upper surface of the thigh when the sitting patient extends his knee-joint. However, the latter method gives a better functional result. In the present material there are more failures among the cases in which transposition was done by rotation of the tractus, but the varying periods of observation exclude definite conclusions. The operative method has been decided upon *in casu* since, for instance, in marked contracture of the musculus tensor fasciae and the tractus ilio-tibialis it is better to perform transposition by rotation.

#### PHYSIOTHERAPY AND POSTOPERATIVE CARE

In most cases physiotherapy aiming at correction of fixed deformities was commenced prior to operation and, when necessary, a corrective plaster cast was applied to reduce the deformity (particularly flexion contracture). After the operation, the extremity was immobilized for 3 to 4 weeks (by means of a posterior splint or a plaster bandage) with the knee-joint at maximum extension and the hip-joint in slight flexion. Physiotherapy was started one week after the operation with exercises for the tensor muscle; training of the knee-joint and walking exercises were commenced after termination of immobilization. When there was

a marked flexion contracture of the knee-joint, Kreutz's splint was applied nightly for a couple of months after the period of immobilization.

## RESULTS

In evaluating the results of the present analysis of cases the following points have been considered:

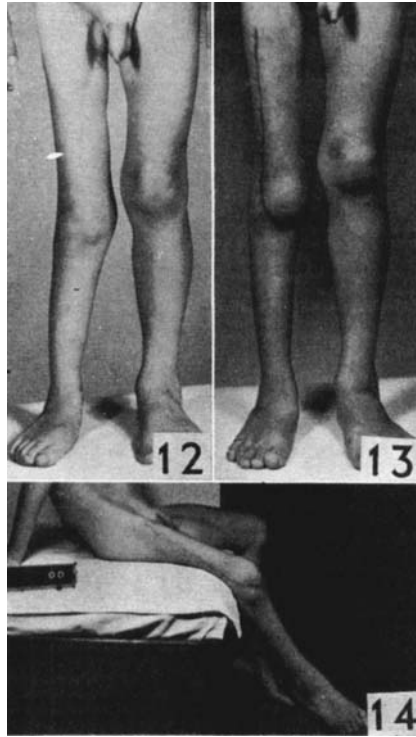
1. Has the extension power of the knee-joint increased and, if so, by how much?
2. Does the knee-joint feel more stable when walking and has limping been reduced or disappeared entirely? Is it necessary for the patient to have recourse to hand-to-knee walking?
3. Is the deformity completely or partly corrected?
4. Ability to walk without braces, crutches or walking-stick.
5. The patient's own opinion on the result of the operation.
6. The results of the clinical examination before operation and at the latest follow-up examination.

On the basis of these factors the results can be classified as follows:

### *Scale.*

- Very good:** The extension power of the knee-joint has increased considerably, and the knee has gained in stability; and/or the deformity has been corrected; and/or the patient could discard his braces and/or crutches.
- Good:** The extension power and stability of the knee-joint have increased; and/or the deformity has been reduced; and/or the patient could discard his crutches, and/or his braces; or he could manage with smaller brace than before.
- Fair:** The stability of the knee-joint has increased and the extension power of the knee-joint has increased somewhat. The deformity has been corrected to some extent. The patient can use a walking-stick in place of his crutches and believes that the condition has improved.
- Unaltered:** No improvement in the condition or function of the knee could be established apart from increased stability. In the patient's opinion the operation did not improve the function of the knee-joint or his ability to walk.
- Impaired:** The patient had to resort to brace or crutches as a result of the operation; and/or deformity of the knee has occurred or increased.

Very good and good results were observed in a total of 42 out of the 63 cases, which makes 66.6 per cent of the whole series (Figs. 12-30). In 12 cases the condition was classified as unaltered. There were no cases of impairment in the present series, *i.e.* no patient was compelled

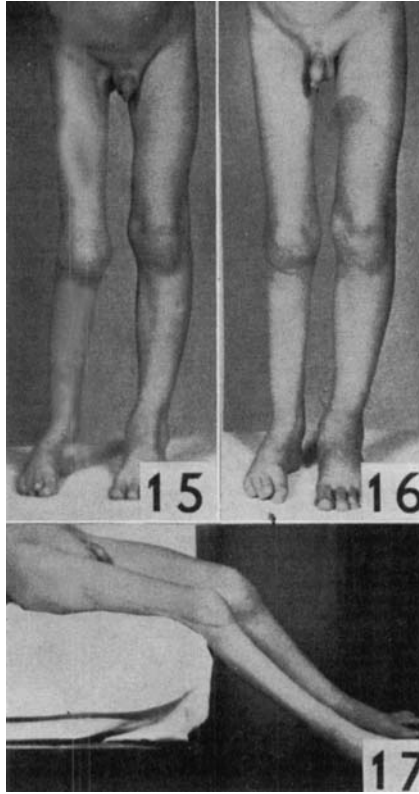


*Figs. 12-14.*

Case 58.—Fig. 12: patient aged 6 years, photographed 5 years after paralysis. Extension power of the knee-joint = 1; genu valgum and external rotation of the tibia. Figs. 13 and 14: condition 1 year after operation, in which the tractus was transposed by rotation to the patella. The deformity has been corrected; extension power of the knee-joint = 2-3.

TABLE 6  
*Results.*

	No. of cases	Per cent
Very good .....	21	33.3
Good .....	21	33.3
Fair .....	9	14.3
Unaltered .....	12	19.1
Impaired .....	0	—
<b>Total .....</b>	<b>63</b>	<b>100</b>

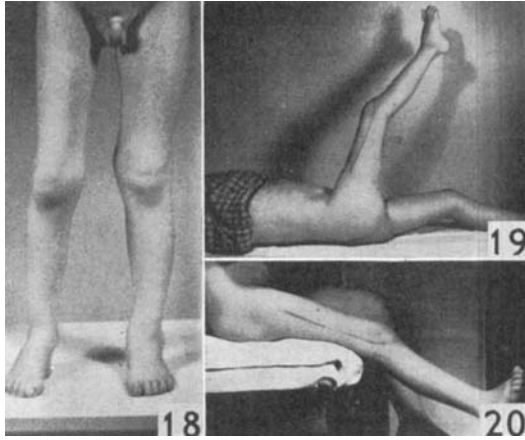


*Figs. 15-17.*

Case 61.—Fig. 15: patient aged 6 years, photographed 4 years and 6 months after paralysis. Extension power of the knee = 1; genu valgum, flexion contracture of both the knee—and hip-joint, the tibia rotated outwards, contracture of the tractus ilio-tibialis. Figs. 16 and 17: the condition 6 months after the operation. The tractus was transposed in the same plane and fastened to the patella. The deformity has been considerably corrected; extension power of the knee = 3.

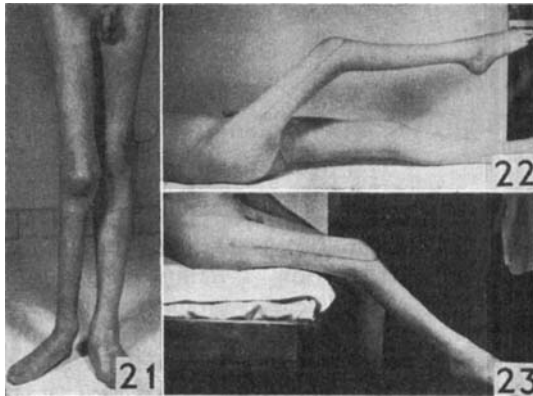
to resort to a brace or crutches on account of the operation. No deformities of the knee-joint had resulted from the operation, nor were there any instances in which preoperative deformities had increased.

Classifying the results according to the clinical symptoms (Table 7), increased extension power of the knee-joint was noted in 48 cases out of 63, and higher stability of the knee-joint in 53 cases. As will be seen from tables 6 and 7, some of these cases have been recorded as unaltered since the improvement was slight and the hoped-for results were not achieved.



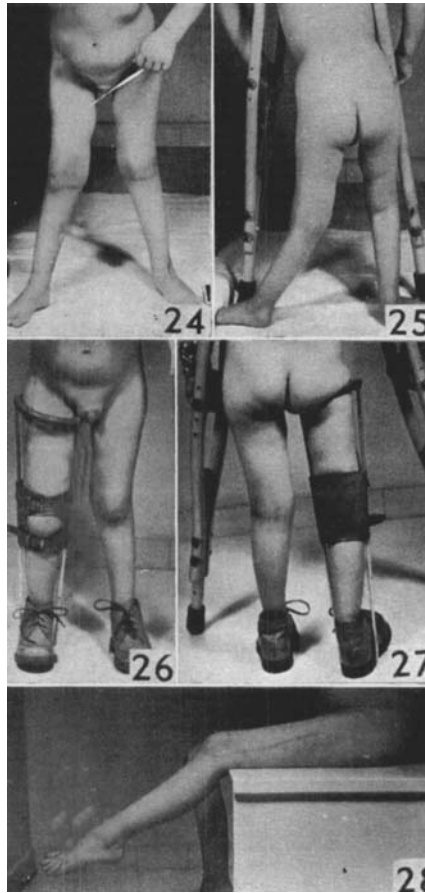
*Figs. 18-20.*

Case 52.—Fig. 18: Patient aged 4½ years, photographed 3½ years after paralysis. *Extension power of the knee 2-3*; flexion contracture of the knee- and hip-joint, the tibia is rotated outwards, contracture of the tractus ilio-tibialis. Figs. 19 and 20: condition 3 months after operation. The tractus has been transposed in the same plane to the patella. *The deformity is already corrected; extension power of the knee = 4.*



*Figs. 21-23.*

Case 60.—Fig. 21: patient aged 6 years, photographed 5 years after paralysis. *Extension power of the knee = 2-3*; before the operation the patient used a *long brace on his right extremity*; the typical deformity of the extremity was caused by contracture of the tractus ilio-tibialis. Figs. 22 and 23: condition 5½ months after operation. The tractus has been transposed in the same plane to the patella. *The deformity has been almost completely corrected; the long brace has been exchanged for a peroneal brace; extension power of the knee = 3.*

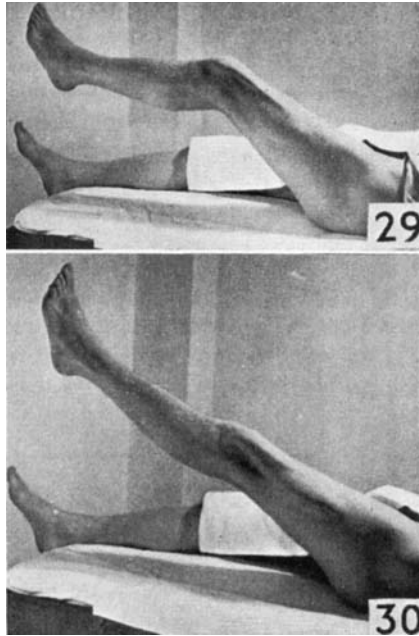


*Figs. 24-28.*

Case 51.—Figs. 24 and 25: patient aged  $6\frac{1}{2}$  years; photographed 3 years after paralysis. Before the operation the patient was able to *stand with crutches but not to move*. Extension power of the left knee = 1. Both lower extremities exhibited *deformities* due, among other things, to contracture of the tractus. Figs. 26-28: condition 1 year and 4 months after operation. In the left extremity the tractus was transposed in the same plane to the patella. In the right extremity the tensor muscle was transposed to the symphysis. *Walks comparatively well on crutches and without braces on the left limb. The deformity in the left limb is almost completely corrected.* Extension power of the left knee = 3.

#### CAUSES OF FAILURE

In 12 cases the condition remained unchanged, and the factors responsible for the failure of the operative procedure in these cases are given in Table 8.



*Figs. 29 and 30.*

Case 43.—Patient aged 35 years, photographed 12 years after operation. The tractus was transposed by rotation and fastened to the patella. *Extension power of the knee = 2 before operation. The patient used walking-stick when moving; there was no deformity. Since operation, extension power of the knee = 4. The patient does not use walking-stick and the stability of the knee-joint is good. Flexion of the knee-joint normal.*

TABLE 7  
*Results classified according to clinical symptoms.*

Symptoms	No. of cases	Per cent
Increased extension power of the knee-joint .....	48/63	76.2
With higher stability of the knee-joint .....	53/63	85.0
Completely corrected or reduced deformity .....	27/36	75.0
The patient was able to discard his brace and/or crutches	17/25	68.0
The patient was able to discard his walking-stick .....	6/6	100.0

In the individual cases the following factors contributed to the failure:

*Failure of the operative technique:*

In the *first* case the transposed tractus had become completely detached from the patella. In the *second* and *third* cases the tractus was partly detached and tractus

fibres were still palpable on the tibial condyle, *i.e.* only part of the tractus had been transposed, while part remained in its former site. In the *fourth* and *fifth* cases part of the tractus also remained in its former site and the tractus had not been detached high enough, as could be deduced from the shortness of the incision. In the *sixth* case the preoperative physiotherapy had been inadequate and the flexion contracture had not been corrected. In this case the detachment of the tractus was also inadequate.

*Incorrect indications:*

In the *first two* cases the muscular function of the extremity was too poor, the power of the tensor muscle being only 1, and there was no deformity. In the *third* case, 41 years had elapsed since the onset of the illness and there was a marked deformity of the joint (25 degrees of valgus, 30 degrees of recurvatum), the power of the tensor muscle being only 2. In the *fourth* case, the muscular function of both extremities was practically nil and the patient walked with crutches, the power of the tensor muscle being 2 to 3.

*Other diseases:*

In the *first* case arthrodesis of the knee had been performed for severe osteoarthritis three years after transposition of the tractus. In the *second* case the patient underwent supracondylar osteotomy six years after transposition of the tractus, which caused impairment of the primarily good result; this information was obtained from the case-record.

TABLE 8  
*Causes of failure in 12 cases.*

Cause	No. of cases
Errors in operative technique .....	6
Indications misjudged .....	4
Another disease .....	2

DISCUSSION AND CONCLUSIONS

It is to be noted that the series does not comprise any impaired cases or any complications. On the other hand, there are reports giving comparatively high percentages of impaired cases after transposition of the hamstrings (*cf.* 3, 6, 11). *E.g.* Schwartzmann & Crego reported recurvatum of the knee-joint at a late stage in 16 per cent of their cases despite good primary results after transposition of the biceps femoris alone (3, 11); after the same operation, lateral dislocation of the patella had resulted in 29 per cent of cases. It should be possible, however, to avoid the latter by performing the transposition by the medial route (2). Recurvatum of the knee-joint was further established in 23 per

cent of cases after simultaneous transposition of both the biceps femoris and semitendinosus (11).

In view of these reports on transposition of the hamstrings, and considering the results obtained in the present series of cases, the transposition of the tractus ilio-tibialis to the patella and utilization of the musculus tensor fasciae latae is thought to be a suitable and justified method of operation in the treatment of quadriceps paralysis and certain deformities of the lower extremities caused by contracture of the tractus ilio-tibialis subsequent to poliomyelitis.

To obtain good operative results, a careful selection of patients and a good operative technique are imperative. The muscular power of the musculus tensor fasciae latae must be sufficient, since it was observed in some cases that it diminished somewhat after operation. Postoperative physiotherapy should be commenced sufficiently early. Flexion contracture of the knee-joint should be corrected as far as possible before the operation by means of physiotherapy and perhaps with a corrective plaster cast. The power of the muscles of the hip-joint does not seem greatly to affect the end results since good results are obtained in cases both with good and with poor muscle power. At follow-up examination, the flexion of the knee was found to be limited in 9 cases, though by less than 50 degrees, which in itself does not constitute a major functional disturbance. This should be taken into consideration when the tractus is fastened to the patella.

Particularly suitable for transposition of the tractus ilio-tibialis to the patella are cases in which there is a comparatively powerful tensor muscle and a deformity of the knee-joint following contracture of the tractus (genu valgum, flexion contracture of the knee-joint and of the hip, external rotation of the tibia). In children and adolescents it is easier to achieve a favorable result. Likewise it is established that a taut tractus ilio-tibialis has an inhibiting effect upon the growth of the lateral margin of the proximal tibial epiphyseal line. Mild cases of paralysis are favourable, and when some of the power of the quadriceps muscle is preserved, the result in carefully selected cases is good. Little benefit is obtained when the paralysis comprises the entire limb or is of severe degree, with the exception of those cases in which there is contracture of the tractus. In these rare cases considerable improvement is achieved by mere fasciotomy.

By transposing the tractus to the patella and thus making use of the tensor fasciae latae muscle, one must not expect to achieve full extension of the knee-joint, since the tensor muscle is too short for this

movement. For the function of the knee this is not in itself an important factor, or at all necessary for the stability of the knee-joint (*cf.* 4). However, the power of extension of the knee-joint can be taken as one criterion when evaluating the condition before and after operation.

#### SUMMARY

The treatment of paralysis of the quadriceps muscle and certain deformities of the lower extremity following contracture of the tractus ilio-tibialis with its allied structures after poliomyelitis is reviewed on the basis of 63 cases of transposition of the tractus ilio-tibialis to the patella. The average follow-up period was 7 years.

It is stressed that the tractus ilio-tibialis should be dissected sufficiently far, near to the trochanteric region, and the tractus to be transposed should include the fibres setting out from both the tensor muscle and the gluteus maximus. Subperiosteal fixation to the patella was not considered firm enough and osseal fixation was therefore preferred.

Excellent results were noted in 21 out of 63 cases (33.3 per cent). Considerable improvement had occurred in a further 21 cases (33.3 per cent). Some improvement had occurred in 9 out of 63 cases (14.3 per cent). In 12 cases the patient's condition was unchanged (19.1 per cent). In no case was impairment observed. The reasons for failure in the 12 cases were: in 6 cases an operative-technical factor, in 4 cases misjudgement of the indications, and in 2 cases the presence of another disease.

The study of these 63 cases has indicated that transposition of the tractus ilio-tibialis to the patella and utilization of the musculus tensor fasciae latae is a suitable method of operation in the treatment of quadriceps paralysis and some deformities (genu valgum, knee-flexion deformity and external rotation of the tibia, flexion and abduction contractures of the hip) subsequent to poliomyelitis.

#### RESUME

Le traitement de la paralysie du muscle quadriceps et de certaines déformités des extrémités inférieures, dues à la contracture du tractus ilio-tibialis avec ses structures alliées, à la suite de la poliomyélite, a été passé en revue sur la base de 63 cas de transposition du tractus ilio-tibialis à la rotule. La période moyenne d'observation a été de 7 ans.

Il est souligné que le tractus ilio-tibialis doit être détaché assez loin, près de la région trochantérienne et que le tractus à transposer doit

comprendre aussi bien les fibres qui partent du muscle tenseur que celles qui partent du gluteus maximus. La fixation subpériostale à la rotule n'a pas été considérée comme étant assez ferme et c'est pourquoi on a préféré la fixation osseuse.

D'excellents résultats ont été enregistrés dans 21 des 63 cas (33,3 %). Une amélioration considérable a été observée dans 21 autres cas (33,3 %). Une certaine amélioration est apparue dans 9 des 63 cas (14,3 %). Dans 12 cas, la condition des malades est restée inchangée (19,1 %). Il n'y a eu d'aggravation dans aucun cas. Les raisons de l'insuccès dans ces 12 cas ont été les suivantes: dans 6 cas un facteur opératoire technique, dans 4 cas une fausse estimation des indications et dans 2 cas la présence d'une autre maladie.

L'étude de ces 63 cas a montré que la transposition du tractus ilio-tibialis à la rotule et l'utilisation du muscle tenseur fascia lata est une bonne méthode d'opération dans le traitement de la paralysie du quadriceps et de certaines déformités (genu valgum, déformités de flexion du genou et rotation externe du tibia, contracture de flexion et d'abduction de la hanche) subséquentes à la poliomyélite.

#### ZUSAMMENFASSUNG

Über die Behandlung der Lähmung des M. quadriceps und gewisser Deformitäten der unteren Gliedmassen als eine Folge der Kontraktur des Tractus ileo-tibialis und der mit ihm verbundenen Geweben wird auf Grund von 63 Fällen von Transposition des Tractus ileo-tibialis auf die Kniescheibe berichtet. Die durchschnittliche Beobachtungszeit betrug 7 Jahre.

Es wird hervorgehoben, dass der Tractus ileo-tibialis genügend weit proximal bis in die Trochantergegend präpariert werden sollte und dass der zu transponierende Tractus sowohl die vom Tensor Fasciae als auch die vom M. gluteus maximus kommenden Fasern einschliessen sollte. Subperiostale Fixation an der Patella wurde nicht als ausreichend angesehen und die ossale Fixation wurde deshalb vorgezogen.

Ausgezeichnete Ergebnisse wurden bei 21 von 63 Fällen beobachtet (33,3 %). Bedeutende Besserung wurde in weiteren 21 Fällen gefunden (33,3 %). Mässige Besserung wurde bei 9 von 63 Fällen gesehen (14,3 %) und in 12 Fällen war der Zustand unverändert (19,1 %). In keinem Falle wurde eine Verschlechterung beobachtet. Die Gründe des Misserfolges in den 12 Fällen waren: In 6 Fällen ein operativ-technischer Faktor, in 4 Fällen eine unrichtige Indikationsstellung und in

2 Fällen das Vorhandensein einer anderen Erkrankung. Das Studium dieser 63 Fälle zeigt, dass die Transposition des Tractus ileo-tibialis auf die Patella und Benützung des *M. tensor fasciae latae* eine brauchbare operative Methode zur Behandlung der Quadricepplähmung und einiger Deformitäten (genu valgum, Knie-Beugecontractur und Auswärtsdrehung der Tibia, Flexions- und Abduktionskontrakturen der Hüftgelenke) im Gefolge der Poliomyelitis, ist.

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