P. G. K. BENTZON, AARHUS:

EPIFYSEOLYSIS CAPITIS FEMORIS[1])

(Author's Abstract)

Epifyseolysis capitis femoris (e. c. f.) appears to be a relatively frequent affection among the patients applying to the new Orthopedic Hospital of Aarhus for advice and treatment, the hardworking young people of the rural population being particularly liable to this lesion of the hip. This fact makes the problem involved in the treatment of the lesion particularly topical to me, and that is one of the reasons why I have wanted to present this paper here. Besides, I thought it might be of interest to the orthopedists of our society to discuss this question here prior to our coming joint meeting with the surgeons at Oslo next year (1939).

The etiology and pathogenesis of the lesion involve several points of great theoretical interest, a thorough account of which may be of significance also to prophylactic measures that may be taken. But the practicing orthopedist has to take his stand primarily with a view to the therapeutical problems presented by the manifest cases of slipping epiphysis.

Going through the more recent literature on this subject we find that it is the question of reposition that divides the authors into advocates and opponents of this method of treatment, and the opponents of reposition are in majority. At a previous meeting of this society (at Helsingfors 1931) I de-

[1]) A work by Dr. P. Lütken, published in this volume (p. 119), deals with the same clinical material as that on which I have based my experiences. For casuistic details, therefore, the reader may be referred to Lütken's article.

clared myself an advocate of the reposition treatment; and even though subsequent experiences have made me restrict to some extent the range of indications for this therapy, I still think that the instances of *complete* recovery that have been obtained with this treatment go against the view held in several quarters, that this form of treatment should be discarded altogether.

When the orthopedist is faced by a lesion that has brought about a break in the continuity with dislocation, his therapeutic efforts should be aimed primarily to restore the normal anatomical relations by removing the dislocation. The contraindications for the application of this rule have to be very strong indeed before it seems safe to deviate from this general principle of orthopedic therapy. When several experienced orthopedists state that attempts at reposition are to be omitted in e. c. f., it is because they think that this lesion in itself implies some weighty contraindicating factors. Several considerations to this effect have been advanced that can be summarized in the following three points: 1) that attempts at bloodless reposition is useless because reposition of the dislocation is not practicable at all; 2) that the manoeuvres of reposition implies such a great risk of injury to the subsequent function of the joint that they are to be considered unwarrantable; 3) that the prognosis of the lesion subsequently is fairly good even though the primary dislocation is not abolished.

Among the authors who claim that reposition of e. c. f. by bloodless manoeuvres is not practicable at all, Mau[1]) maintains that in those cases where a successful reposition has been reported the actual result has been merely a pseudoreposition, *i.e.*, that the head of the femur actually keeps being dislocated and merely appears to be replaced in some roentgenograms taken in certain projections. On this point Camitz subscribes to the view advocated by Mau, and in particular to the two latter considerations mentioned above; he characterizes an attempt at reposition as inexpedient and unsafe and—quoting Haglund and Hofmei-

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[1]) References to the literature are given in the aforementioned paper by Dr. Lütken.

ster—he mentions that untreated slipping epiphysis as a rule in course of time will result in an increasing functional improvement of the hip.

As to the question of the practicability of bloodless reposition, I merely wish to state that I have performed it several times with absolutely satisfactory results. I fully agree with

Fig. 1.
Lütken: Case 8. 6 — 2 — 1937.

Mau that in roentgenography one may readily place the femur in a certain position of rotation, in which even a markedly dislocated head of the femur on the X-ray plate will present itself as a fine instance of reposition. Still, it is equally certain that several of those cases I have treated with bloodless reposition have shown a true and exact reposition of the dislocation in control roentgenograms taken under the proper angles. (Figs. 1 and 2).

For that matter, among the 24 cases of e. c. f. I have examined and treated there are instances that may be taken to furnish evidence in support of practically every view that has been ad-

vanced concerning the course and treatment of this lesion. There are absolutely satisfactory results of the reposition treatment in cases where the hip subsequently proves to be perfectly symptom-free—clinically as well as roentgenologically—and capable of meeting all working requirements. The oldest of these cases have now been under control for up to ten years or so. There

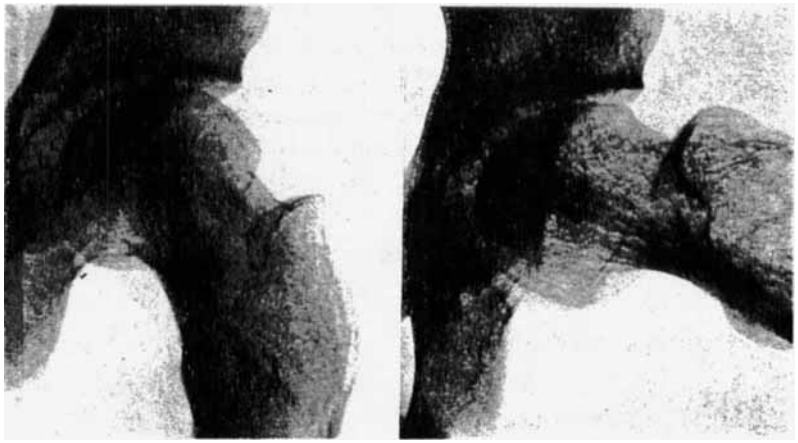

Fig. 2.
Lütken: Case 8. Afterexamination 1939.

are a few cases in which reposition of the hip subsequently has been followed by the development of an arthrosis; but there are also cases in which arthrosis has appeared in hips that had been treated with nothing but confinement to bed or with weight extension for a very brief period. Finally, there are some cases in which the result has been a functionally *almost* good hip, notwithstanding a persistent dislocation, and other cases in which the dislocation has gone on to such degrees that only a fairly good functional result was obtained even after correcting osteotomy.

According to these findings I have to claim that it has not been proved that in cases where the function becomes poor after reposition treatment it is this therapy that is the cause of the subsequent unfavourable course of the affection, as it is im-

possible to say how it would have turned out without reposition treatment. It is my impression that if an attempt at reposition fails (if the head of the femur is fixed so strongly in the position of dislocation that it cannot be moved properly), we should be very cautious in bandaging in *forced* abduction and inward rotation, as the joint cartilage by this is exposed to a *pressure* that may become strong enough to bring about a permanent injury. For that matter, I do not think that our experiences with e. c. f. so far have been of such a nature as to indicate that in dealing with this lesion we have to give up beforehand the possibility of attaining *complete* recovery—and this may be obtained only when the dislocation between the head and the neck of the femur is removed.

DISCUSSION:

Waldenström, Stockholm:

In my opinion reposition of the slipping epiphysis under anæsthesia is not to be employed, for it does not turn out successful. This view of mine has not been modified now after I have seen Bentzon's pictures, for none of these pictures show any successful reposition—or, perhaps, no reposition at all.

Whether any backward displacement has taken place through the reposition, is impossible to say, because the pictures are not taken in such a way that one can tell anything about the present state of things. If we were to form any opinion as to this point the pictures would have to show some cases with a picture taken in front view and another taken from the side, focused alike, and such pictures would have to be taken before and after the reposition. Only with such pictures will one be able to say anything about any obtained improvement of the position.

I hold that reposition of slipping epiphysis under anæsthesia should never be performed, and that it never will turn out more than partially successful, and in any case it implies a risk of necrosis of the head of the femur—as I have pointed out in previous papers.

In the case of one patient I performed reposition on one side in 1913, and on the other side in 1914—with a favourable result, I thought at that time. The repositions were carried out with the same intention as stated by Dr. Bentzon, that is, undoubtedly the reposition was not complete. Through this reposition, however, the patient had necrosis of the head of the femur, resulting in ankylosis of the hips.

Odelberg-Johnson, Vejbyslätt,

emphasizes that epiphysiolysis is a disease that takes a protracted course.

When at last the patient has subjective symptoms and is taken under treatment, the neck of the femur usually shows in an already established deformity with dorsal and distal bending of the contour.

Even though reposition may give a better position and in this way bring about a better function, a *restitutio ad integrum* through reposition is out of the question. The position obtained through reposition may be kept only if the opposite surface through the reposition get into broad contact.

Silfverskiöld, Stockholm:

For my part I first perform reposition under anæsthesia. In this state abduction is carried out without any force. Most likely no or only slight reposition of the slipping epiphysis is obtained in this way. But the relaxation of the contractures and, by this, the reposition of the position of the femur that is gained in this way might probably explain the result that may be expected from the method. Plaster bandage for 2—3 weeks, then confinement to bed for a considerable length of time and active motions which are to be increased but very cautiously.

In older cases, even past the age when growth takes place, and in cases where the mobility of the joint is greatly reduced, we sometimes meet with particularly favourable indications for arthroplasty. The best results I have obtained with plastic operation on the hip-joint have just been in that kind of cases.

Langenskiöld, Helsingfors:

Odelberg-Johnson's statement that we must consider not only the deformity but also the underlying disease deserves to be emphasized. *Indicatio morbi* is more important than *indicatio orthopædica.*

Bentzon's attempt at reposition of the displacement is aimed only at the latter indication, and to me it seems unquestionable that in this way one will do damage to the bone tissue which is affected already, and clear the road for a progressive process. To me it seems that reposition ought to be reserved for such cases as were mentioned by Sven Johansson.

Even when a traumatic etiology seems evident, I think the displacement or fracture takes place in pathological tissue, although no changes may as yet be ascertained by roentgenography.

If we want to make perfectly sure that the deformity is not to become progressive, the extremity has to be relieved from some of its weight-carrying task—for instance, by means of a Thomas splint—till the epiphyseal cartilage has undergone complete ossification.

Many circumstances indicate that the cause of the disease is to be found in some disturbance of the endocrine balance.

Friberg, Stockholm:

Dr. Bentzon has divided his cases in recent and older cases; and as far as I can see the limit is set at 12 months. Of the recent cases none is less than 2 months old as reckoned from the onset of symptoms. In the introductory paper as well as in the discussion it has been emphasized that the process is of an older date than the symptoms. Hence we have to assume that the most recent cases are more than 2 months old—that is, none of them is really to be considered a fresh case, and a priori they all are to be looked upon as unsuitable for an attempt at reposition.

With the rapid processes of healing in children, the union will already have become too firm at the point of time given

by Dr. Bentzon. As a rule, indeed, the child has then been walking about, *i.e.,* it has tolerated the weight of the body.

Bentzon:

By introducing this subject I have obtained what I wanted in particular: to learn the stand taken by my fellow orthopedists on the question about the treatment of slipping epiphysis. And it has been indeed an almost unanimous denunciation of the reposition treatment. I only regret that I did not carry along the instrumentarium for demonstration of the stereoscopic control roentgenograms, which clearly show that the reposition has been exact in those patients about whom I have made this statement. But I will have an opportunity next year to present this material at Oslo. As far as that goes, I think that also the roentgenographic diapositives show the reposition; but I admit that an altogether sure control is obtainable only by means of stereograms.—

To give up a priori any attempt at reposition in cases with rather marked dislocation really means passively to allow such affected hips to remain "chronically defective" throughout life. This, I think, is unjustifiable, when a method is available that may cure at any rate some of these patients completely.