WIBERG:

SPONTANEOUS HEALING OF OSTEOCHONDRITIS DISSECANS IN THE KNEE-JOINT

When applied to osteochondritis dissecans, the term "spontaneous healing" may be conceived in various ways. Of course, we may speak of a clinically spontaneous healing when, during a long observation period, a case remains free from symptoms and in which there are no changes suggestive of arthritis deformans. Such cases have been described both by Hellström and by Löhr. But this need not imply a roentgenological healing of the lesion which may persist unchanged for a great length of time (up to 17 years, as observed by Hellström).

Even though it is thus justified to assume that recovery also takes place in the cases where the bodies of osteochondritis dissecans remain stationary, it is still reasonable to assume that the healing is more complete in those cases where the bodies of osteochondritis dissecans fuse with the bone so as to leave no trace of the previous process.

Three cases of this kind have been described previously by Löhr. In order further to demonstrate this possibility of roentgenological healing, I shall here demonstrate some cases in which conservative treatment led to recovery of this kind. Among the 10 new cases of osteochondritis dissecans admitted for observation to the Orthopedic Clinic in Stockholm within the period of 1937-39, spontaneous healing took place in 3; and 2 additional cases of this kind have been placed at my disposal by colleagues. In one of the latter cases the lesion was bilateral, making a total of 6 knees in the present material.

A schematic survey of this material is given in Table 1, and I shall now give an account of Cases A and C, right knee.

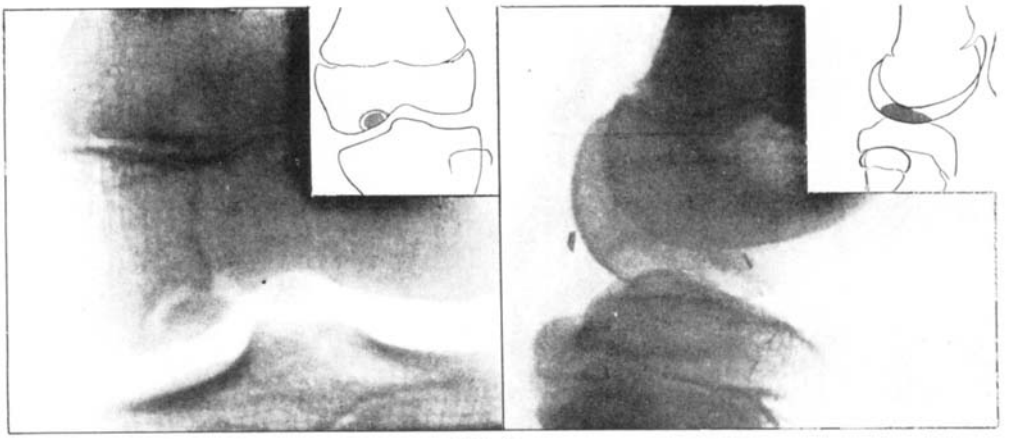

Fig. 1.
7.4.31. Case A.

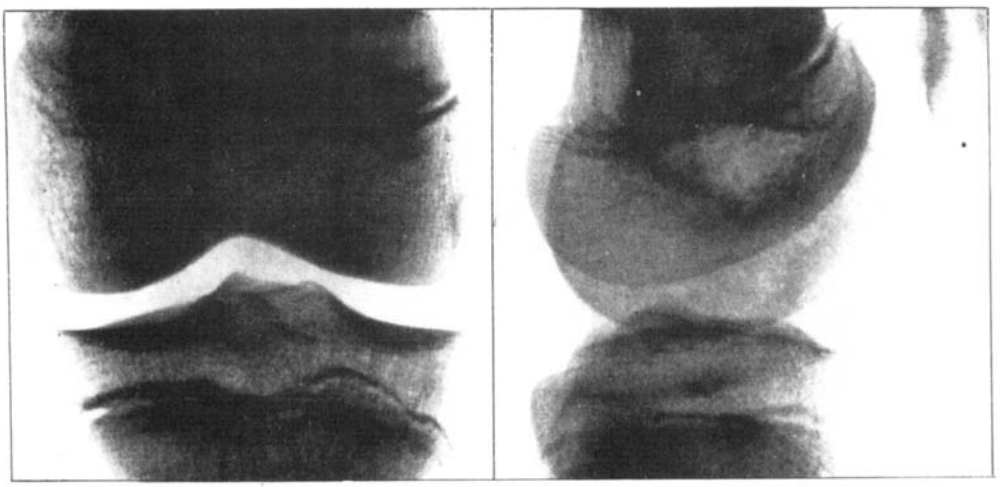

Fig. 2.
19 3.33. Case A.

CASE A. This patient is a young woman, born 10/6 1920, who consulted the physician for the first time in 1931 when some very vague symptoms appeared in the left knee. Physical examination, on 7/4 1931 revealed no abnormality. Roentgeno-

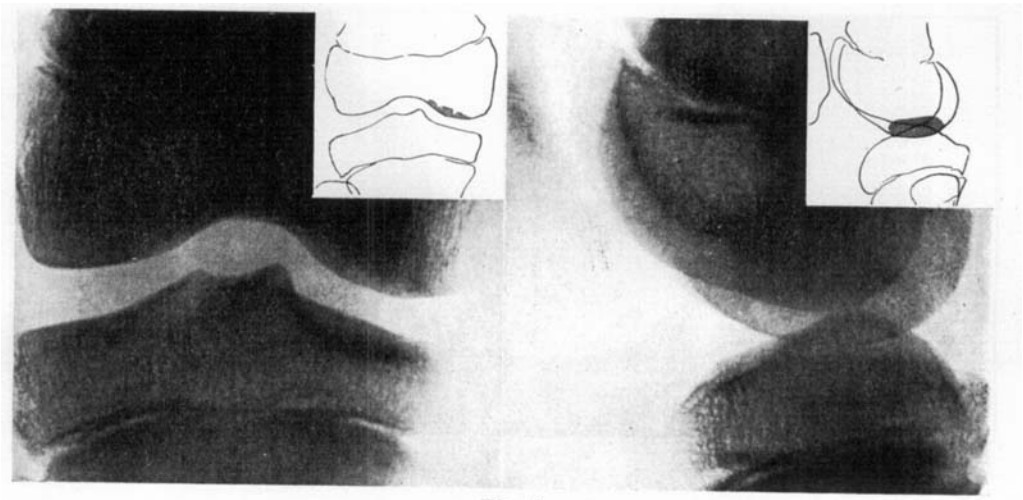

Fig. 3.
31.12.36. Case C. Right knee

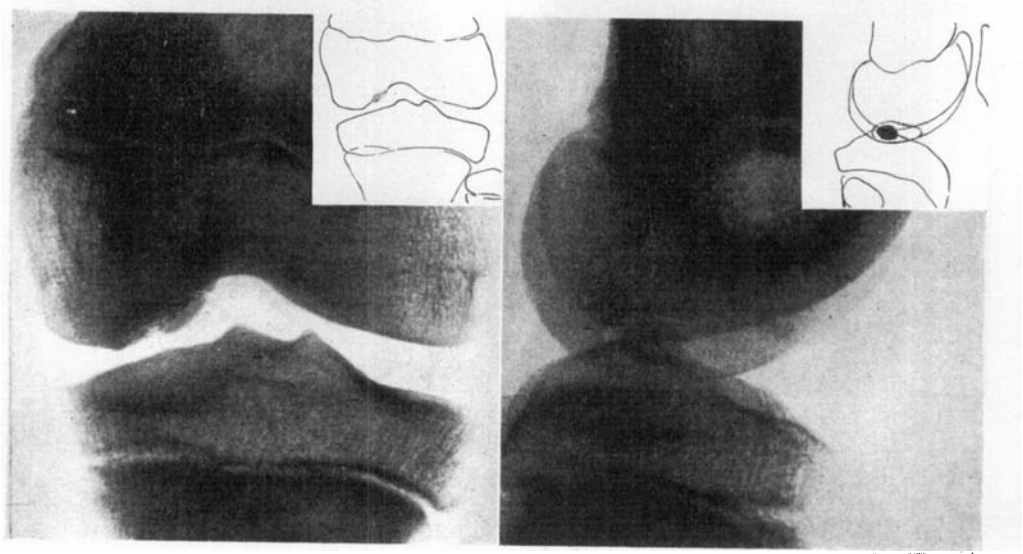

Fig. 4.
12.10.37. Case C. Left knee.

graphy disclosed the presence of a well-defined, pea-sized, osseous body on the surface of the left side of the medial condyle of the femur (Fig. 1). The patient was told not to take part in gymnastic exercises, but otherwise no restrictions were laid down. A control examination with roentgenography on 22/11 1932 still showed the presence of a welldefined, osseous nucleus.

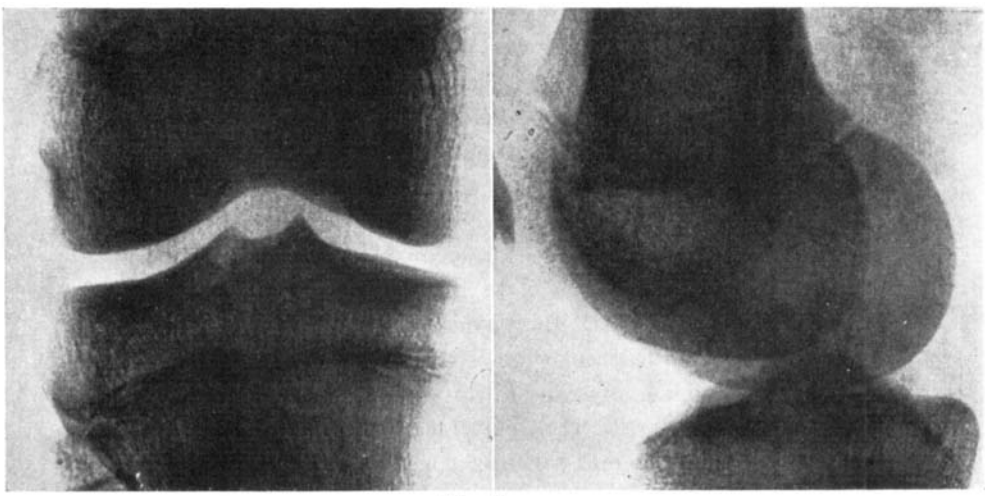

Fig. 5.
3.9.40. Case C. Right knee.

The patient was perfectly free from symptoms in the knee, and she has had no symptoms whatever since. In September 1933 roentgenography showed complete healing of the process (Fig. 2). In 1940 roentgenography was repeated and showed precisely the same features as seen in the roentgenogram of 1933. The patient was still completely free from symptoms.

CASE C. This patient is a boy, born in 1925. Since 1936 he had complained of discomfort in both knees on physical exertion. On a few occasions there had been a tendency to locking of the knee, more pronounced on the right side. Physical examination on 31/12 36 revealed no abnormality in either kneejoint. Roentgenography disclosed a well-defined pit-like defect

on the right side of the medial condyle of the femur (Fig. 3), which was also conspicuous in films taken from the side. A similar process was seen in the left knee. Reexamination by roentgenography on 12/10 1937 revealed a well-defined, demarcated, osseous body that was particularly conspicuous in films taken from the side. The last roentgenographic examination, on 3/9 1940 showed complete healing (Fig. 5); there was no longer any trace in the bony process demonstrated previously.

In all the 6 cases in my material the process was very conspicous but in two of the cases the focus was more diffuse, while in the remaining four the osseous bodies were all of the type shown in the above roentgenograms.

The question now is whether an analysis of these 6 cases may offer any evidence as to which kind of cases is suitable for conservative treatment, as material proves that conservative treatment may indeed lead to a good final result in several cases. For one thing, all the patients are young. Naturally, it is not possible in these cases to give the exact age at which the healing took place, as examination was not performed regularly and at short intervals. It is possible, therefore, that the healing may have taken place at a younger age than recorded in Table 1. As in five of the cases the patient was under 16 years when the lesion healed, one wonders whether this might not apply to the sixth cases too (Case B). Here the interval between the control examinations was very long—from $15^{1}/_{12}$ years to $19^{6}/_{12}$ years—and healing *may* have taking place shortly after the roentgenographic examination at the age of $15^{1}/_{12}$ years; and under such condition this case would also be similar to the others. There is also the possibility that cases with a demarcated bone-cartilage body require a stronger capacity of the bone for generation in order to heal than do cases with a diffuse process—like Case B—and that healing in the latter cases therefore might take place at a later junction than in the former. Accordingly, it is conceivable that the healing in Case B may have taken place somewhat later than in the other cases.

At any rate, we find in this material a limitation of the age for conservative treatment. Such a process is not likely to heal

after the age of 20 years in any case, perhaps not after 16 or 17 years. This is in agreement with our present knowledge about the capacity of bone for regeneration: that the younger the person, the greater his capacity, and that when the growth of the bone has ceased, at the age of about 20 years, we can probably no longer reckon with healing in the sense that this process may fuse with the bone without leaving any trace. But, naturally, it takes a fairly large material to furnish any reliable evidence to this effect.

With conservative treatment of the lesion it is highly desirable that the patient be examined roentgenographically every year or half year, so that the development of the process is under observation. If in such cases, then, under conservative treatment the process becomes detached, it is my opinion that the loose body should be removed by extraction. The cases observed by Löhr in which a free body has become attached and fixed by healing somewhere in the joint are probably to be looked upon as extraordinarily rare; and a loose body in a joint will always be associated with some irritation of the joint and wear on the cartilage that may result in secondary arthritis deformans. If, in spite of restrictions as to sport and gymnastics, some really annoying symptoms persist, operative treatment has to be considered, of course, even though the patient is still in the healing age, that is, under 20 years.

If the patient has reached the age of 20, osteochondritis dissecans should be judged and treated in keeping with our previous experiences, that is, locking of the joint constitutes an absolute indication for operative treatment, and when the symptoms are less troublesome, the indications for operation have been decided on from case to case, depending on various circumstances, such as the occupation of the patient, his social conditions and so on.

The risk connected with conservative treatment must be looked upon as exceedingly slight. As I have pointed out, no doubt, the joint is injured more from the defect in the cartilage associated with the removal of such a process than from letting the process remain under observation of its further development.

TABLE 1.

Spontaneous Healing of Osteochondritis dissecans in the Knee-joint.

Case	Initials	Sex Side	Age at the first X-ray exam.	Age at last X-ray exam. before healing	Age at X-ray demonstration of healing	Character of osteochrodrit. dissecans.
3	B. S.	Girl Right	11 4/12	11 8/12	14 6/12	Demarcated nucleus
6	O. E.	Boy Left	13 1/12	14 4/12	15 2/12	Diffuse process
A	M. Ö.	Girl Left	10 10/12	12 5/12	13 3/12	Demarcated nucleus
B	M. Ä.	Girl Right	15 1/12	15 1/12	19 6/12	Diffuse process
C	R. K.	Boy Right	11 11/12	12 9/12	25 8/12	Demarcated nucleus
		Left	„	„	„	

DISCUSSION

Stenport, K.:

It will be appropriate for me here to demonstrate another instance of healed osteochondritis dissecans in the knee-joint.

The patient was a boy, B. L., who in 1931, at the age of 13 years knocked his right knee while playing. Three weeks later he was admitted to the Orthopedic Clinic, Hälsingborg with pain in the left knee and a distinct effusion. The left thigh measured 1 cm. less in circumference than the right, and the calf of the left leg measured ½ cm. less than that of the right. The mobility of the joint was normal. Roentgenography showed a distinct picture of osteochondritis dissecans at the typical site, on the medial condyle of the femur. The patient was treated conservatively, with prohibition of gymnastic exercises and sport for a couple of years. In 1937, on the occasion of a traumatic injury to the other knee, he was reexamined roentgenographically, and the films now showed a perfectly normal structure, and he had no complaint whatever as to his left knee.

(Demonstration of X-ray pictures.)