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A COMPARATIVE STUDY OF JOINT PAIN IN ADULT AND JUVENILE RHEUMATOID ARTHRITIS

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An observation by one of us that joints affected by rheumatoid arthritis are not as painful in children as in adults had led us to carry out a pilot study in order to investigate this finding. We have found no such statements in the literature.

Material and Methods

24 children aged between 4 and 14 years and suffering from rheumatoid arthritis were included in this study. Eight of them were 7 years old or less. As controls we used thirty patients with rheumatoid arthritis between the ages of 18 and 51, of whom eight were over 40 and only one was under 20 years old. In each group 95 affected joints (190 altogether) were carefully analysed regarding pain. Only the wrists, elbows, knees, and ankles were taken into account (Table I).

TABLE I
AFFECTED JOINTS

Patients	Juvenile	Adult	Total
Wrists	32	32	64
Elbows	18	18	36
Knees	27	27	54
Ankles	18	18	36
Total	95	95	190
No. of Joints with Active Inflammation	33	33	66

The symptoms studied included hydrops, swelling, active inflammation, range of movement, pain on movement in extreme positions of the joint, pain on palpation, and pain on using the joint and on weight bearing. Only definite swellings were included in the series. A definite hydrops or increased circumference was estimated by comparison with the contralateral joint.

The skin temperature was used as a criterion of active inflammation. This was measured in standardized surroundings, and only joints showing a definite increase in skin temperature in comparison with the surrounding areas of the body or the contralateral joint were included.

The range of motion in each joint was determined several times in evaluating the pain on movement.

The degree of pain was estimated as follows:

− = no pain,
+ = uncertain or slight pain,
++ = definite pain,
+++ = very severe pain.

The adult patients were selected so that the duration of the rheumatoid process in each case was approximately the same as in the children. In each group seven patients were receiving steroid treatment.

Results

Table II includes all the joints studied. There are more painless joints among the children, by each method of assessment. More adults experienced uncertain, slight, and moderate pain, but there was no great difference in the patients with very painful joints.

When only joints with active inflammation were taken into account (Table III, opposite), there was no difference between children and adults in pain due to passive movements in extreme positions of the joint. This was to be expected in cases with active inflammation, and it was therefore surprising that the results of other evaluations of pain showed a difference. The palpation and use of the joints does not cause the same tension in the inflamed structures,

TABLE II
PAIN IN ARTHRITIC JOINTS IN CHILDREN AND ADULTS

Source of Pain		Movement in Extreme Positions		Palpation		Use of Joint and Weight Bearing	
Patients		Children	Adults	Children	Adults	Children	Adults
Grading of Pain	−	45	29	83	47	74	42
	+	28	36	9	40	13	36
	++	18	28	3	7	6	15
	+++	4	2	—	1	2	2
Totals		95	95	95	95	95	95

TABLE III
PAIN IN JOINTS WITH ACTIVE INFLAMMATION IN CHILDREN AND ADULTS

Source of Pain		Movement in Extreme Positions		Palpation		Use of Joint and Weight Bearing	
Patients		Children	Adults	Children	Adults	Children	Adults
Grading of Pain	—	9	8	29	13	22	8
	+	13	10	4	15	4	17
	++	8	14	—	5	5	6
	+++	3	1	—	—	2	2
Totals		33	33	33	33	33	33

and there is more scope for an individual to imagine or have a presentiment of pain. The children appeared to suffer less than adults when a painful joint was "loaded".

The exclusion of cases under treatment with corticosteroids did not change the results.

There are differences in the pain experienced in various joints. In those with a small joint cavity and a complex of anatomy intense pain is experienced in movement in extreme positions. The wrists, ankles, and elbows are joints of this kind, and in them there was no difference between children and adults. A clear-cut difference was found on palpation and on "loading" the joint. In the elbow, however, the loading mechanism was not used correctly, and the results are thus indecisive.

The number of patients was too small to determine whether the children's ages had any effect on the amount of pain experienced.

Discussion

The results tend to support the observation that children suffering from rheumatoid arthritis suffer less discomfort in the affected joints than adults.

If the concept of the two mechanisms involved in the phenomenon of pain is accepted as a hypothesis, these results can be easily explained. The physical phenomenon of pain, mediated through nervous connexions, is developed during pre-natal life and is ready to serve at the very first moment of life. The psychical component develops later during life and is by no means constant, being a very complex, changeable manifestation of mental life (Hardy, Wolff, and Goodell, 1952). The reactions of children to pain may thus differ from that of adults, because of the different stage of mental development.

If this concept is accepted, the significance of pain in rheumatoid arthritis can be better understood and evaluated, and this may influence the treatment of pain and evaluation of disability in rheumatoid arthritis.

Summary

A comparative study has been made of the pain experienced in the affected joints of juvenile and adult patients suffering from rheumatoid arthritis. 95 corresponding joints in each group of patients were studied, as regards pain on movement of the joint in extreme positions, pain on palpation, and pain on using the joint and weight bearing.

The results tend to confirm the observation that children suffer less discomfort from joints affected by rheumatoid arthritis than adults, because children react differently to pain.

REFERENCE

Hardy, J. D., Wolff, H. G., Goodell, H. (1952). "Pain Sensations and Reactions," p. 388. Williams and Wilkins, Baltimore.

Etude comparée de la douleur articulaire dans l'arthrite rhumatismale adulte et juvénile

RÉSUMÉ

On procéda à une étude comparée de la douleur ressentie dans les articulations affectées par des malades jeunes et adultes atteints d'arthrite rhumatismale. On étudia 95 articulations correspondantes dans chaque groupe de malades en ce qui concerne la douleur au mouvement de l'articulation en positions extrêmes, à la palpation, au mouvement actif et en état de supporter un poids.

Les résultats tendent à confirmer l'observation que les enfants sont moins incommodés par les articulations affectées que les adultes, parce que les enfants réagissent différemment à la douleur.

Estudio comparativo del dolor articular en la artritis reumatoide adulta y juvenil

SUMARIO

Se hizo un estudio comparativo del dolor sentido en las articulaciones afectas por enfermos jóvenes y adultos con artritis reumatoide. Se estudiaron 95 articulaciones correspondientes en cada grupo de enfermos respecto al dolor al mover la articulación en posiciones extremas, a la palpación, al movimiento activo y al soportar un peso.

Los resultados tienden a confirmar la observación que los niños padecen menos molestia en las articulaciones afectas por artritis reumatoide que los adultos, porque los niños reaccionan diferentemente al dolor.