Joint Involvement In Acute Rheumatic Fever (ARF) of the Young Adult Male (*)

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Twenty-four adult patients, all army recruits with ARF and carditis, were analyzed for joint involvement. The mean age was 20.7 ± 1.7 SD years. All patients except one were male. Knees and ankles were the most commonly involved joints. Axial skeletal involvement was very rare. The mean number of joints involved was 3.33 ± 1.97 SD (range 1-9 joints). The arthritis of ARF in the adult was usually oligo or monoarticular.

Polyarticular involvement was associated with a higher erythrocyte sedimentation rate (ESR). The mean ESR (mm/h) in patients who had 1 or 2 joints involved was 58.66 ± 32.87 SD mm/h, whereas the mean ESR in patients who had 3 or more joints involved was 97.43 ± 32.15 SD mm/h ($t = 2.7992$, $p < 0.01$). None of them had symptoms related to the cardiovascular system at the time of their presentation. This stresses the importance of a careful clinical examination of the heart in an adult patient with arthritis.

The most often quoted work on the distribution of joint involvement in ARF is that of[3,4] which dates back to 1962[1]. We have not come across more recent data on this issue. Recently we had the unique opportunity to observe the occurence of arthritis in ARF among the military recruits in rural,Turkey (Sivas).

Patients and Methods

Twenty-four consecutive patients with rheumatic fever and carditis constituted the probands. They were selected from 43 consecutive patients who had an arthritis resembling that of rheumatic fever in fact that they had, in addition, carditis. Carditis was diagnosed if there was 3 or more on a scale of 6 degrees, high-pitched, blowing apical holosystolic and/or basal diastolic murmur on admission or had at least 2+ holosystolic de novo murmur that appeared during the hospital stay. In the

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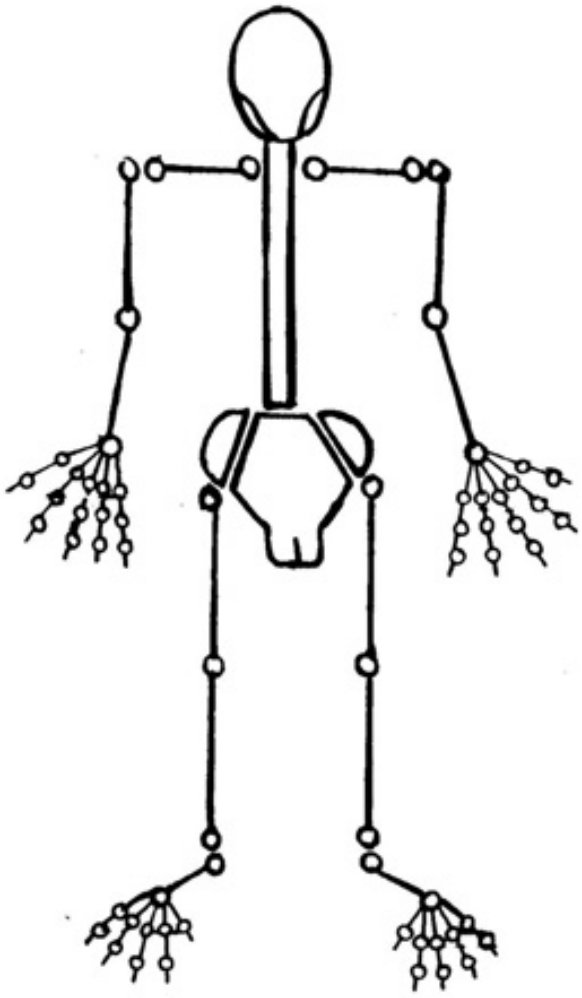

Fig. 1: Distribution of Joints involved (the figures refer to the number of diseased Joints).

later instance these de novo murmurs were invariably accompanied by ECG and/or telecardiographic changes. None of the patients was referred because of symptoms attributable to carditis. Thus in each instance carditis was picked up by the physician. All patients had a through physical examination on admission and had cardiac auscultation everyday. An erythrocyte sedimentation rate (ESR), white blood count (WBC), hematocrite, electrocardiogram and a teleradiogram were done on admission and as required during the hospital stay.

All patients received full doses of aspirin (6 grams perday) except 8 who were felt to have carditis severe enough to receive steroids; 45-60 mg per day of prednisolone.

Results

A) General features and carditis: Being army recruits, all patients, except 1, were male. The only female

Table 1: The curse of carditis and laboratory findings

Duration of hospitalization (days)	Peresence of carditis on admission	Carditis developed during hospital stay	Carditis present on discharge	*Laboratory findings		
				WBC (mm^3)	ESR (mm/h)	Hct (%)
42	+		-	11000	100	43
37	+		-	14000	100	33
56*	-	+	-	16000	60	40
48	+		-	16600	75	42
36	-	+	+	10000	80	36
53	+		-	8000	3	47
52	-	+	-	8000	110	43
48	+		-	6000	60	32
120	+		-	12000	90	37
84	-	+	-	12000	92	44
47	-	+	+	8000	22	47
97	+		+	6000	86	37
47	-	+	-	7000	18	43
97	+		+	1000		47
55	-	+	+	9600	122	42
60	-	+	+	14000	95	36
33	-	+	+	6000	60	40
10	+		+	7000	40	41
13	+		+	11200	60	40
80	+		±	10000	116	47
41	+		-	12000	136	32
107	+		±	15000	130	45
120	+		-	14000	130	40
63	+		-	12000	108	41

* This patient had a typical subcutaneous nodule of ARF

patient was the 14 year-old daugther of an army officer. The mean age of the remainder was 20.7+ 1.7 years. The mean hospital stay for all patients was 59.5±29.5 (SD) days. All patients had fever at their initial presentation. (Mean: 38.4+0.6°C SD) In 35%, the arthritis was so severe that they had to be brought in on a stretcher. The corse of carditis and

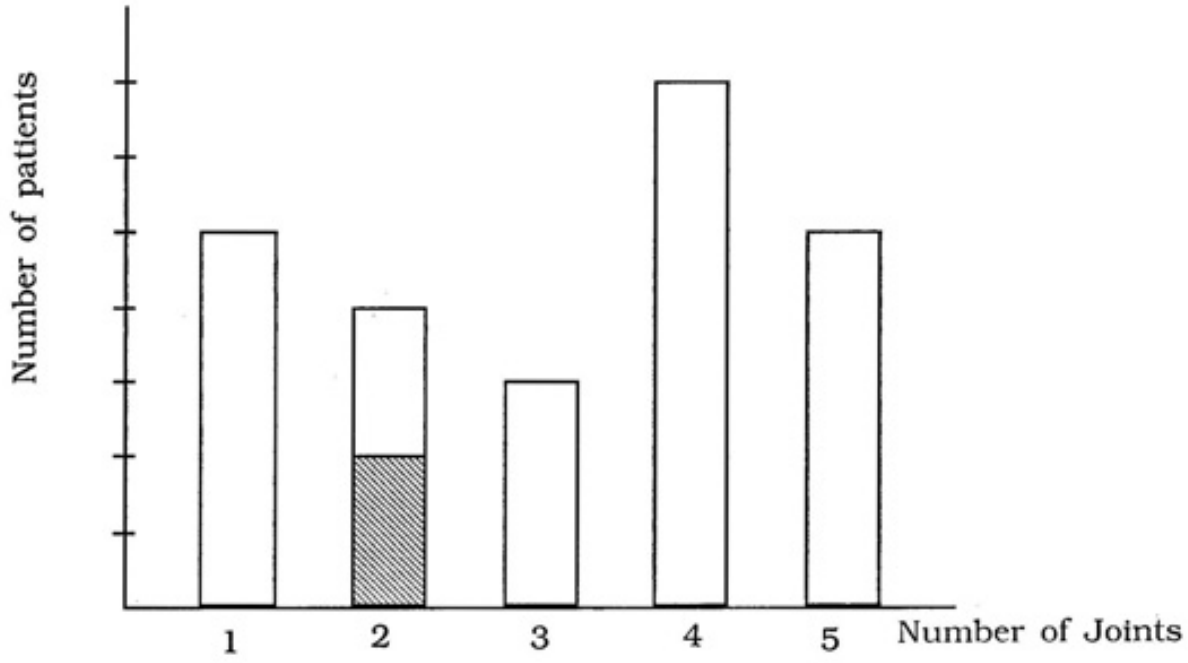

Fig. 2: Symmetry of joint involvement (the notched area represent symmetrical involvement.)

laboratory findings are depicted in Table-1. ESR was elevated in all except 2 patients, 15 of 24 patients had a WBC > 10. 000/mm^3, 7 of 24 patients had a hematocrite below 40% while all the other patients had a normal hematocrite upon discharge strongly suggesting that this was an anemia due to acute inflammation.

B) Arthritis: Fig.1 demonstrates the joints involved during the whole period of observation. It is to be noted that knees and ankles were the most commonly involved joints and there was a distinct sparing of the axial skeleton.

The mean number of joints involved was 3. 33 ± 1.97 SD (range: 1-9 joints). Five patients had monoarthritis.

The symmetry of the joints involved is shown in Fig. 2. The vast majority (17 of 19) of the attacks were not symmetrical.

Polyarticular involvement was associated with a higher ESR. The mean ESR in patients who had 1 or 2 joints involved was 58.66±32.87 SD mm/h, whereas the mean ESR in patients who had 3 or more joints involved was 97.43±32.15 SD mm/h (t=2.7992, p< 0.01).

Discussion

Although sophisticated or even some routine laboratory help was not available we had little doubt that our patients had ARF. It would be most unusual for other arthrites to be in this fashion. There are in fact few rheumatologic entities that could include carditis as a major manifestation. Among the more common; SLE would be excluded first by the sex prevalance and second by the absence of other clinical findings usually found in SLE. Viral arthritis can often be confused with ARF however carditis is not a feature of viral arthiritis[2].

Although the arthritis of ARF has often been described as polyarticular, in our series it was found to be mostly oligo or monoarticular in the adult. The paucity of axial involvement has also been described by others[3,4]. Also the high frequency of involvement of feet, knees and ankles are in agreement with previously published data[3,4].

This study also confirms the previous clinical impression that carditis in the ARF of the adult is usually subclinical[3]. Thus even in a population of patients selected for the presence of carditis, no patients had carditis as a presenting problem. This stresses the importance of a careful clinical examination of the heart in every adult patient with arthritis.

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