ELECTROCARDIOGRAPHIC CHANGES IN SECONDARY SYPHILIS

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Summary

Electrocardiographic (ECG) changes were studied in twenty-one cases of secondary syphilis, before and after treatment. Abnormal electrocardiograms so detected are reported.

Material and Methods

The present study was carried out in twenty-one patients with secondary syphilis, attending the Skin and V.D. Department of Rajendra Hospital, Patiala.

Clinical features consisted of condylomatous lesions of anal orifice in five cases and of genitalia in three cases, generalised maculo-papular rash in three cases, history of recurrent abortions in four cases and generalised weakness and sinking sensation in three cases.

Serological tests for syphilis were done in all the cases. Clinical examination did not reveal any cardiovascular abnormality and all cases were normotensive.

In cases under study electrocardiograms were recorded, with patient in supine position after adequate rest and before commencement of antisyphilitic treatment. The tracings were recorded after standardisation of the instrument. Any co-existing disease that could possibly cause E.C.G. changes was meticulously excluded. Only those abnormal ECGs which returned to normal 1 to 3 months after antisyphilitic treatment were evaluated. Minor changes in ECG like low voltage graph, sinus tachycardia and axis deviation were not taken into consideration.

TABLE 1

Showing age and sex distribution of the cases.

Age group (in years)	Number of cases	Male	Female
1—10	—	—	—
11—15	2	2	—
16—20	6	4	2
21—25	3	2	1
26—30	5	1	4
31—35	—	—	—
36—40	2	1	1
41—45	1	1	—
46—50	2	2	—
Total	21	13	8

Observation

Five abnormal graphs (24 per cent) were analysed. Out of these, two showed S-T segment depression. Flat T wave was seen in one of these and inverted T wave in the other. One showed sinus arrythmia and two showed border line left ventricular hypertrophy (L. V. H.) (Table 2).

Left ventricular hypertrophy was considered to be of significance since it returned to near normal, three months after treatmeut.

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TABLE 2
Showing E. C. G. changes in patients

S. No.	Age in years	Sex	E. C. G. changes
1.	42	M	S-T segment depression and T wave flattening in L_2, L_3, aVF, V_5 and V_6
2.	18	F	S-T segment depression in V_1, V_2, V_3, inverted T wave in V_1-V_3 flat or low T waves in V_4-V_6
3.	27	F	Sinus arrythmia
4.	17	M	Borderline L. V. H. (SV_1+RV_5 = 40 mm)
5.	21	M	Borderline L. V. H.

Discussion

Involvement of cardiovascular system in tertiary syphilis is well known. The abnormalities which are recognised are aortic aneurysms, aortic incompetence and myocardial ischaemic syndromes due to involvement of proximal aorta, aortic valves and coronary ostia respectively. Gummatous lesions involving cardiovascular system are rare[1], although, cardiac gumma leading to atrioventricular block has been reported[2,3].

Various authors have reported electrocardiographic changes in secondary syphilis. Steiger and Edeiken[4] demonstrated these E C G. changes in 50 per cent and 42.5 per cent cases, in two consecutive series of thirty and forty cases respectively.

Thirty-eight per cent of the twenty-nine patients reported by Eisenberg et al[5] had abnormalities of E.C.G. Among fifty patients with early syphilis reported by Ince and Mahabir[6] only 16 per cent had these changes.

Some of the changes found in these cases were nonspecific. For example, S-T segment elevation in left precordial leads, is a common finding in healthy Negros and Caucasians[7,8,9]. Changes such as conduction defects in the form or prolonged P-R interval[5], Wenckebach phenomenon and partial right bundle branch block (Winston et al[6]) have also been reported in secondary syphilis. The Wenckebach phenomenon is thought to be due to treponemal invasion of A. V. node or its blood vessels. However, partial right bundle branch block can be a normal finding in healthy persons.

In our series there were only non-specific S-T segment changes. T-wave changes in the form of flat wave and inverted T-wave were the main findings. These could have been due to myocardial involvement by treponemata as these changes were reversed after antisyphilitic treatment. Other E.C.G. changes found in this series were sinus arrythmia and borderline left ventricular hypertrophy. These could also be ascribed to myocardial involvement.

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