ACUTE RHEUMATISM AND TRAUMA

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Introduction

TRAUMA plays a well-recognised rôle in the onset of several acute and chronic diseases of joints and bones. Its relationship to acute osteomyelitis and chronic osteoarthritis is well known, but it is not common to find an association between trauma and acute rheumatic fever with its polyarthritis.

Seitz (1899) investigated nearly 800 cases of acute rheumatism and found that 5 per cent. gave a history of trauma which appeared to bear some relationship to the onset of the rheumatic fever. Julliard (1906), Gerbaut and Andermann (1934) and Edstrom (1936) have also described cases with a history of trauma.

In a review of this problem, Klinge (1934) came to the conclusion that there was no definite evidence of an association between trauma and a subsequent attack of acute rheumatism.

The 11 cases recorded here occurred in an institution for boys aged fifteen to nineteen years. In previous publications the authors have described epidemics of tonsillitis and acute rheumatism which occurred in the course of a year. There were in all 115 cases of rheumatic fever. In eleven of these there appeared to be some relationship between joint trauma or fatigue and the onset of acute rheumatism.

In the institution, physical training and games were an important part of the curriculum. The boys were under constant medical supervision and a careful record was kept of all injuries.

Description of the Cases

CASE No. 1.—A fortnight after admission to the institution a boy aged fifteen was set to sew white ducks. The material was very stiff. The boy was unaccustomed to the use of needle and thread, and at the end of the day he found that his fingers ached. Four days later he was admitted to hospital with acute rheumatic fever which commenced in the finger joints.

There was no recent history of sore throat or other upper respiratory infection.

CASE No. 2.—A boy aged sixteen took an attack of tonsillitis four weeks after joining. He was struck on the left ankle by a cricket ball eight weeks later and the pain and swelling disappeared in three days. On the fourth day, however, the injured ankle became more acutely painful and swollen. His temperature was normal, but his pulse-rate showed a definite bradycardia and a marked sinus arythmia (Glazebrook and Thomson, 1941). He was admitted to hospital where he became pyrexial and developed typical rheumatic fever with pericarditis.

CASE No. 3.—A boy aged sixteen years had been in the institution for eight months and gave no history of tonsillitis during that period. A desk fell on his left great toe and caused some bruises. There was no evidence of any definite bone injury. The pain and swelling subsided in two days. Five days later the joint again became painful and swollen and the boy was admitted to hospital with acute rheumatic fever.

CASE No. 4.—A boy aged fifteen stumbled during a gymnastic class and fell on his left knee. On examination his knee was found to be slightly swollen. On the following day he developed a sore throat, and during the next day or two the swelling and pain in his knee subsided.

A week later he was admitted to hospital with a recurrence of pain and swelling in the left knee and he developed into a typical case of acute rheumatism.

CASE No. 5.—A boy was struck on the knee by a cricket ball. The knee was painful for two days. Three days later the pain and swelling reappeared in the knee and he was admitted to hospital where he developed acute rheumatic fever.

This boy had no recent history of tonsillitis.

CASE No. 6.—A boy aged fifteen years "caught a cold" on entering the institution. This attack of coryza persisted for one to two days. He fell and injured his wrist three days after joining. The pain and swelling rapidly subsided, but six days later the left wrist again became swollen and painful. The elbow joint was also affected at this time and he developed an attack of acute rheumatism.

There was no recent history of tonsillitis.

CASE No. 7.—A young man aged twenty years had an attack of tonsillitis one month and another six months after admission to the institution. Ten days after this second attack of tonsillitis he fell and twisted his left ankle. He was admitted to the casualty ward for treatment of the sprain.

He was apyrexial on admission but acute rheumatism developed during the course of the next few days. The left ankle was the first joint to be affected.

CASE No. 8.—A boy aged sixteen years sprained his right wrist in the gymnasium five weeks after an attack of tonsillitis.

A fortnight later he was admitted to hospital with acute rheumatic fever and his wrist was the first joint to be involved.

CASE No. 9.—A boy aged sixteen years had been in the institution for six months before developing an attack of tonsillitis. A fortnight later he stumbled and twisted his right knee. Nothing abnormal was seen on admission to the sick quarters after the injury. Two days later, however, the same joint became swollen and painful and the boy was admitted to hospital where he developed into a case of rheumatic fever.

CASE No. 10.—A boy aged sixteen years gave a history of rheumatic fever at age eleven. Within a week of joining the institution he developed tonsillitis, and ten days later he fell and injured his right knee. Four days after the injury he was admitted to hospital with acute rheumatic fever and the injured joint was the first to become painful and swollen.

CASE No. 11.—A boy aged sixteen years gave a history of rheumatic fever at age nine. Six weeks after entering the institution he fell and injured his right knee. Five days later he was admitted to hospital as a case of rheumatic fever and the right knee was the first joint to be affected.

Discussion

A history of recent injury was obtained in 11 cases of rheumatic fever. These cases occurred in an institution which housed some 1700 boys, during a severe epidemic of tonsillitis (nearly 2000 cases) and rheumatic fever (115 cases) which had occurred in the course of a year. The history of trauma was very definite. The injury at the time had been recorded and treated if necessary. The subsequent rheumatic polyarthritis affected the traumatised joint first. Recrudescence of pain and

swelling in this previously damaged joint was the presenting symptom in ten of the cases. In the remaining case fatigue of the finger joints appeared to determine the onset of rheumatism, and it may be noted that these joints are rarely affected in acute rheumatic fever.

Physical instruction and games played an important part in the curriculum of the institution and injuries were very common. In the following year, when the epidemic had waned, 25 cases of rheumatic fever occurred. In none of these was there a record of recent injury. Not one gave a history of trauma, although each was carefully questioned.

Seven of the cases gave a history of tonsillitis in addition to the trauma preceding the onset of acute rheumatism. In another case there was a history of coryza in addition to the trauma. In 4 cases there was no history of upper respiratory tract infection, but the epidemic of tonsillitis was so severe that these boys had undoubtedly come in contact with the causative organism even although they did not develop a clinical attack of tonsillitis (Thomson and Glazebrook, 1941).

Summary

1. Recrudescence of pain and swelling in recently injured or fatigued joints was the presenting symptom in 11 cases of rheumatic fever.

2. These cases occurred in an institution where physical instruction and games were an important part of the curriculum. There was an epidemic of tonsillitis and acute rheumatism in the institution.

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