

Clinical and other Notes.

SOME NOTES ON TWO CASES OF GLANDULAR FEVER.

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IN view of the recent outbreaks of glandular fever in different parts of the country, it is thought that some notes on two recent cases of this disease may be of interest. Both cases were recruits from Derby and occupied the same barrack room at Normanton Barracks, sleeping on different sides of the room but in beds exactly opposite.

Glandular fever was first described by Pfeiffer in 1889. Dr. H. Letheby Tidy, F.R.C.P., in the *Lancet* of July 7, 1923, gives an interesting account of this condition following his investigations of an epidemic which occurred at a boys' school. A master appears to have contracted the disease first and there were twenty-four cases amongst the boys. The following is taken from Dr. Tidy's paper:—

Glandular fever is an acute infectious and contagious disease principally of, but not confined to, childhood. It is characterized by a rapid and marked enlargement of the cervical glands and by a less constant and less marked enlargement of the spleen, axillary, inguinal and other glands. The cervical glands may be tender and acutely painful. Abdominal pain is sometimes severe. The fauces are often reddened and a tonsil may be enlarged. There is no anæmia in the acute stages. There may be preliminary malaise, the glands appearing about the third day and reaching a maximum in one to three days. With the swelling there is pyrexia usually 103° F., but it may reach 105° F. for a day or two. It rarely exceeds 100° F. for more than a week. The prominent mass of glands usually subsides in five to fifteen days, but may relapse, or if unilateral may occur on the opposite side. Suppuration is extremely rare. Glands in the neck remain palpable for several weeks or may be for months. After the acute stage there is generally a prolonged period of slight depression of health and anæmia. The most definite complication is a hæmorrhagic nephritis. This is without any definite manifestations of renal disturbance. The parotid is not affected.

The condition has no relationship to mumps, whooping-cough, measles, scarlet fever, tonsillitis, leukæmia, Hodgkin's disease, tuberculosis or infection with pyogenic organisms.

NOTES ON THE EPIDEMIC.

Glandular enlargement was largest in the neck in all cases. The glands were mostly in the usual site deep below the sterno-mastoid. The swellings came on rapidly. The axillary glands were palpable but never formed a visible mass. The mesenteric glands were palpable in a considerable proportion of cases. Abdominal pain occurred in several cases, in one suggesting appendicitis.

There was no exudation on the tonsils but the fauces were reddened in several. Epistaxis occurred in eight cases.

The spleen was palpable only in one case and another factor accounted for this.

There were no instances of vomiting and diarrhoea.

Definite relapses occurred in two cases. In one instance four weeks from the onset and in the other five weeks.

In almost all the cases it was very difficult to classify many of the mononuclear cells as large or small lymphocytes. The main mass of the protoplasm is usually greater than is normal in small lymphocytes and stains more deeply. The nucleus is less regular and is frequently notched and often eccentric. There are no nucleoli. A considerable number of typical lymphocytes is always present. These abnormalities in the lymphocytes have been carefully described by observers of infective mononucleosis and also by previous recorders of such cases. The nucleus of the most atypical cells has some resemblance to a small-sized Rieder nucleus.

The incubation period was from ten to twelve days.

CONCLUSIONS.

- (1) Glandular fever is a clinical entity.
- (2) An absolute lymphocytosis is a normal occurrence.
- (3) Glandular fever and the condition described as mononucleosis are identical.
- (4) Recovery is permanent and there is no relationship to leukæmia, Hodgkin's disease or tuberculosis.
- (5) There is no evidence that sepsis is a cause of absolute lymphocytosis.

Further references to the disease may be found in a letter from Dr. Tidy to the *British Medical Journal* of May 10, 1930, and in an article published in the same Journal of June 7, 1930, and communicated by Drs. Evans and Robb of St. Bartholomew's Hospital.

Our present knowledge of glandular fever may be summarized as follows:—

(1) Glandular fever is an acute infectious and contagious disease of, but not confined to, childhood. It is characterized by rapid and marked enlargement of the cervical glands and by a less constant and less marked enlargement of the axillary, inguinal, and other glands.

(2) The infecting organism is unknown.

- (3) The incubation period is between five and twelve days.
- (4) The duration of infection is uncertain. Tidy has provisionally laid down its duration as (a) until the temperature has been normal for a week, (b) the greater part of the glandular swelling has subsided and there is no tenderness, (c) the fauces are clear.
- (5) The degree of infectivity is not high. Tidy states that he has never seen an obvious case of infection in a hospital ward. On the other hand, susceptibility to mass infection is very high, such as in schools.
- (6) Males are more often attacked than females.
- (7) The onset is sudden with malaise, reddening of the fauces and perhaps enlargement of the tonsils. Signs of sepsis or exudation are slight or entirely absent except in patients with previous tonsillitis.
- (8) There is no typical rash. Erythematous, papulo-macular, or urticarial eruptions may be present, but rashes of any type are rare. Some authorities deny their association with glandular fever.
- (9) There may be an irregular fever extending over several weeks.
- (10) The enlargement of the lymphatic glands is most marked in the cervical region and generally appears first in that region. This is not always the case, as early involvement of the mesenteric group may occur giving signs and symptoms of appendicitis. The enlarged bronchial glands may cause cough of a paroxysmal nature resulting from pressure on the bronchus. The cervical glands may be uncomfortable, but their size is out of proportion to the degree of tenderness or to the faucial symptoms. They are generally discrete and very rarely suppurate. The axillary and inguinal glands may be enlarged but not to the same extent as the cervical.
- (11) The spleen is slightly enlarged in some cases.
- (12) The blood. A mononucleosis is the rule. This, however, may be transitory. There is an increase in the number of the lymphocytes, but it would appear that there is a certain difficulty in classifying a certain percentage of the cells found. In some cases there has been a striking increase in a variety of immature forms resembling large, mono-nuclear cells.
- (13) Complications. Hæmorrhagic nephritis occurs in some cases, without any definite manifestations of renal disturbance.
- (14) Relapses may occur even four weeks after the onset.
- (15) The treatment is symptomatic.

Case 1.—Private A. B., aged 18, service 4/12 year. Unit: Depot, Sherwood Foresters. This man while on guard duties on June 8, 1930, was taken ill suddenly with headache, shivering, and giddiness and was taken to the Reception Station at the barracks. Temperature on admission 101° F. On the following day headache persisted and muscular pains were present. No physical signs were found in the chest or abdomen. Heart sounds were normal. The pharynx was inflamed. The spleen was not palpable and all reflexes were normal. No vomiting or diarrhoea. There was a roseolar rash over the abdomen, back, arms and legs. On June 10 headache disappeared and patient stated that he felt quite well. On June 11

temperature rose to 101.6° F. and all the previous symptoms returned. Patient's condition remained in this fluctuating state until June 17, when he was transferred to the Military Hospital, Lichfield.

On admission to Lichfield his condition was as follows:—

There was a profuse rash over arms, legs, and trunk. The spots were discrete with a diameter of about three millimetres. Temperature 101° F., pulse 110. No physical signs in the lungs. Heart sounds normal. All reflexes present and normal. Urine normal. Complained of abdominal discomfort, but nothing abnormal detected. Spleen not palpable. Pharynx appeared normal. There were glands to be felt in the anterior triangle of both sides of the neck and in the axillæ and groins. The enlargement appeared to be simple. The glands were discrete and were not tender. A Widal was negative; Wassermann was negative. Blood-culture was sterile. The blood picture was normal except for some large white cells. There was never any albuminuria.

The progress was interesting. The temperature varied from normal or subnormal to 101° or 102° F. Patient would have a day with a normal temperature when all symptoms would disappear together with the rash. The following day the temperature would rise to 101° or 102° F. The rash would return together with headache, muscular pain, etc. This state of affairs continued for five weeks. Right through this febrile period the pulse remained very slow. Even with a temperature of 102.6° F., the pulse was only 92 and generally the rate was between 60 and 70. The glandular condition remained about the same during this period. On July 21 Dr. F. W. Marshall, C.M.P., attached to the hospital, suggested that an injection of sulfarsenol might help in the treatment which so far had been entirely symptomatic and 0.2 gm. was given intravenously. The effect was wonderful. After one more rise on July 23, the temperature dropped to normal on July 24 (the forty-seventh day of the disease) and remained normal for the rest of the patient's stay in hospital. A second injection of sulfarsenol was given on August 1.

There were no further symptoms. The rash did not return and all the glands disappeared. Convalescence was uneventful, there were no complications and no relapse.

The patient was discharged to duty on August 17 after a stay in hospital of seventy-one days.

Case 2.—Private G. G., aged 18, service 5/12 year. Unit: Depot, Sherwood Foresters.

This man was admitted to the Reception Station, Derby, on June 20, 1930, complaining of shivering, headache, and sore throat. He stated that he felt ill the previous day when at musketry on the range. On examination patient looked ill and had a temperature of 99.6° F. The glands were enlarged on the left side of the neck, the skin over them being red and tender on pressure. Left tonsil was inflamed; tongue coated and moist. No physical signs in the lungs. Heart sounds normal. No tender spot in the abdomen, spleen not palpable. All reflexes present and normal. On

the following day headache became severe and a yellow deposit formed on the left tonsil. There was pain on movement of the head due to the swollen glands on the left side. Some dysphagia. Temperature 99.6° F., pulse 100. A throat swab proved negative to K.L.B. and the patient's condition remained much the same until June 26, when he had a rigor, temperature rising to 104.6° F. accompanied by vomiting.

On June 27 the patient was transferred to the Military Hospital, Lichfield.

On admission his temperature was 99.4° F. Nothing abnormal was detected in the chest, abdomen, or central nervous system. No albuminuria. Enlarged glands were felt in the axillæ, groins and neck. The glands in the neck formed a solid mass beneath the left sterno-mastoid muscle and were very large. A rash was present over the buttocks, but there were no spots on the rest of the body. The day after admission patient had a rigor, temperature rising to 105.2° F. Temperature remained more or less quiescent from this time until July 6, when it rose to 100° F. and in the succeeding fortnight fluctuated between 100° and 102.4° F. During this period patient felt no symptoms, and on inquiry replied always that he felt quite well and was anxious to get up. The glands continued swollen—especially the mass in the left side of the neck which showed signs of suppuration. This, however, never occurred. On July 21 sulfarsenol 0.2 gm. was given and improvement was at once noted. The temperature never rose above 100° F. and the glands in the neck slowly disappeared. A second injection of sulfarsenol was given on August 1, and on August 4 temperature became normal for the first time. This was on the forty-sixth day of the disease. All symptoms disappeared and it was thought that the patient was convalescent.

Unfortunately, three days afterwards, his temperature rose suddenly to 102.2° F. with a pulse of 96 and a respiration rate of 36. Signs of fluid in the left chest developed with much cough and a muco-purulent expectoration. An exploring needle showed fluid which proved sterile. During the following month the sputum was examined repeatedly for T.B. and the result was invariably negative notwithstanding the fact that the patient presented all the clinical signs of tuberculosis of the left lung. So ill indeed had the patient become that his life was despaired of. On September 25 his condition commenced to improve. The temperature began to show signs of settling and in one week he gained 4½ lbs. in weight. On October 2 a further increase in weight was noted. Cough and expectoration became much less and the temperature finally came to normal on October 31 and remained normal until his discharge from hospital. During convalescence his weight increased steadily. On November 27 he was brought before a Medical Board and invalided owing to his chest condition which was one of chronic pleurisy and fibrosis of the left lung. He left hospital after a stay of 163 days.

The chief points of interest in these two cases of glandular fever are:—

(1) The question whether the injection of sulfarsenol had any curative effect on the disease. In Case 1 it did certainly seem to act in a miraculous fashion. After the first injection the patient never looked back, there were no complications and no relapse occurred. In Case 2 the temperature became normal for the first time after the second injection, but unfortunately, a complication set in shortly afterwards.

It is interesting to note that in both cases cessation of fever occurred on or about the forty-sixth day of the disease.

Two cases are of course too few for any conclusion to be come to as to the value of sulfarsenol treatment in glandular fever, but it is thought that it should certainly be tried in any other cases which may occur.

(2) These cases certainly bear out the contention that the disease does not possess a high degree of infectivity. No case occurred amongst the nursing orderlies and there were no further cases in the hospital.

(3) The incubation period in Case 2 was twelve days.

(4) The appearance and disappearance of the rash in Case 1 coincident with the febrile and afebrile days has not apparently been noted before.

(5) No enlargement of the spleen was noticed in either case.

(6) The blood picture showed a lymphocytosis in both cases.

(7) The acute serous pleurisy in Case 2 has not been described before as a complication of glandular fever.

We are indebted to Major Swayne, O.B.E., R.A.M.C., Military Hospital, York, for the notes on the literature of the disease.

A NOTE ON *BALANTIDIUM COLI*.

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WHILST in charge of a laboratory in India, a stool was brought to me for examination which was found to contain, besides much blood and some mucus, swarms of active *Balantidium coli*. The majority were swimming rapidly and freely in all directions, but already some few showed the peculiar rotatory movement said to presage their death, that is, a rolling motion round the long axis in one direction, followed by a pause and a reversal in the other direction.

Some writers have given their opinion that, if more frequent microscopical search was made, balantidiosis would be found to be more common than at present appears to be the case. It seemed worth investigating, therefore, whether *Balantidium coli* might not resemble *E. histolytica* in the rapidity with which it becomes unrecognizable in the standing stool, since such a characteristic would account, at least in part, for the difference between the recorded and the estimated incidence of the disease.