RECENT ADVANCES IN MEDICAL SCIENCE.

MEDICINE.

UNDER THE CHARGE OF
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The Plague.

As cases of plague appeared in Glasgow in August last, and as the acquaintance of medical men in this country with that disease is necessarily almost nil, it might be of benefit to note here some of the latest contributions to the symptomatology and treatment of the malady.

Reiche (München. med. Wchnschr., July 31, 1900) treats of the clinical symptoms and diagnostic points in the cases of plague observed by him during the late epidemic in Oporto, which commenced at the beginning of June 1899, and disappeared by the second week of December of that year. The first days of June were signalised by the appearance of plague in the oldest, narrowest, and dirtiest streets of that Portuguese city. The first to develop the symptoms was a Spanish labourer, dwelling close to the docks. Shortly, nineteen cases occurred in the immediate neighbourhood. Gradually the epidemic spread to other parts of the town, with an evident tendency towards special areas of infection. Only when a month had elapsed was the diagnosis of plague, based on the clinical symptoms, arrived at; and only after another month was it confirmed by the discovery of Yersin's plague bacillus in the contents of a bubo. The numbers increased very slowly during June, and the first half of July; after which time a slight decrease was noted. But the middle of August showed a somewhat rapid increase, which became still more pronounced after the second week of September; thirty-five cases, for instance, were notified during the second week of October alone. Subsequently the epidemic became less severe, and by the 10th of December had subsided.

In Oporto, typical cases of plague usually commenced acutely with headache, rigors, and profound depression; often with diarrhea and vomiting. The patients were disinclined to rise from the prone position. Apathetic, livid, white in countenance, with quickened breathing, congested eyes, their symptoms denoted grave infection. The spleen was enlarged; the abdomen frequently tender; the temperature high,
but variable; albuminuria often present. The lymphatic glands of the inguino-femoral region were most commonly affected, becoming enlarged and painful; less frequently the glands in the axilla; while, in many instances, the lymphatic glands of other regions exhibited less conspicuous swellings. After a few days, convalescence followed critical or gradual fall of temperature, with or without suppuration of the glandular buboes; or the symptoms became more and more severe, simulating septicæmia, or the intoxication accompanying intense pyrexia, and ended in death. Patients who recovered showed for long, lowered body temperature, prostration, and anæmia. The duration of the attacks of plague varied greatly, generally lasting over several weeks, even in the absence of any complication.

Apart from these typical instances, malignant attacks occurred, fatal within twenty-four or thirty-six hours; while, conversely, slight and trivial cases, in which the usual clinical symptoms were mostly or entirely absent, were met with, the correct diagnosis of which could only be come to from a knowledge of their having been in close contact with undoubted and more typical cases. Numerous intermediate forms intervened between these extremes and the average type. In 285 cases, 142 were males, 143 females; sex thus exerting no influence upon the incidence of the disease. A third of the attacks occurred in children under 15 years of age. Prodromal symptoms were seldom present, the attacks usually commenced abruptly; antecedent feelings of ill health as a rule indicated subsequent malignancy. The period of incubation in some cases was from two to four days; in others, ten to eleven days. The temperature curves presented no special characteristic features; even in severe cases they seldom rose to any excessive height. In some the fever was continuous, in others remittent. Conjunctivitis was common, and frequently severe. Epistaxis in many instances formed an early symptom. The respirations, even although no actual pulmonary lesion was present, were quick and shallow; the pulse small and regular. The tongue was generally covered with a grey or brownish coating, and seemed moderately dry. The liver dulness in several cases was increased, and the organ tender to pressure. In one case, where this tenderness was pronounced, fresh perihepatitic inflammation was discovered on post-mortem examination. Enlargement of the spleen corresponded directly with the temperature curve. The buboes were usually present from the commencement of the disease, and were readily perceptible. A characteristic symptom consisted in the intense tenderness to pressure of these glandular swellings, and the somewhat elastic resistance offered by them to the finger, by reason of the surrounding oedema. This tenderness was present even in the most trivial cases. A true plague-caused carbuncle was only present in one case; meningitis in but one also.

The treatment adopted consisted in general hygienic measures, isolation, well-ventilated sick-rooms, and early administration of tonics and intestinal antiseptics, whose action caused the arrest of the early enteritis. Later on Yersin’s serum was injected by Calmette’s method. The diagnosis offered no difficulty in pronounced cases; in mild, the exquisite tenderness of the bubonic swellings afforded the most valuable sign. The total mortality was 33·44 per cent., a proportion higher
in appearance than in truth, seeing that a number of mild cases could not have come under medical notice. The mildness of this epidemic contrasted markedly with previous outbreaks, with mortalities of from 50 up to even 90 per cent.

Calmette et Salimbeni (Ann. de l'Inst. Pasteur, Paris, 1899, tome xiii. p. 865, referred to in Schmidt's Jahrhr., Leipzig, 1900, No. 6) were sent by the Pasteur Institute to Oporto, to study the same outbreak of the plague. They personally observed 152 cases. Of 142 of these, treated with plague serum, twenty-one, or 14.78 per cent., died; contrasting with a mortality of 63.72 per cent. among seventy-two others not treated with the serum, recorded outside the hospital. Large quantities of the serum must be used, if good results are to accrue. Hypodermic injection of from 20 to 40 c.c. was followed by temporary relief; but if not repeated this effect gradually disappeared, and complications seemed to be readily incurred, especially in the lungs. One must employ large doses, and best by intravenous injection. The method found to be most successful is as follows:—20 c.c. of the serum is injected into a vein as soon as possible; and, within the next twenty-four hours, two hypodermic injections given, each of at least 40 c.c. Each day following, so long as the temperature remains high, and for two days after the temperature has fallen, 10 to 40 c.c. of the serum, the amount used varying with the severity of the symptoms, is injected, and in cases of emergency an intravenous dose again given. In this manner lung complications are most readily avoided. Inoculation with 5 c.c. of the serum, injected below the skin of the abdomen, rapidly produced immunity from infection, but only exerted this power for about a fortnight. Hauffkine's method of inoculation with cultures of the plague bacillus after their exposure to a heat of 70° C., and consequently the death of the bacilli, produces a more prolonged period of immunity, but one of slower establishment.

Clemow (Am. Journ. Med. Sc., Phila., April 1900), from his own observations in India, describes the clinical aspect of plague. He recognises four forms—bubonic, pneumonic, septicæmic, and abdominal. The mode of entry of the bacilli in all these forms is generally by the lymphatic system, or through the respiratory tract. In the abdominal form, with symptoms confined entirely to that region, it is doubtful whether the source of infection is, or is not, the intestinal canal. The bubonic form is by far the commonest; the pneumonic form only occurred in twelve out of 502 cases noted by him, or a little more than 2·3 per cent.

The course of the temperature is by no means characteristic. Elevation above 40° C. renders a case of grave prognosis. Antipyretics, therefore, are of value; Clemow recommending large doses of phenacetin in hot rum or water, along with hot packing. Cold packs he does not recommend. The tongue is usually covered with a thick, greyish white skin, when moist like mother-of-pearl—a characteristic sign of plague. In several cases, however, some of which were fatal, the tongue presented no abnormal signs. Vomiting, one of the first symptoms to occur, is usually cerebral in origin. Other nervous symptoms include general muscular weakness, and occasional paresis of separate muscular groups. The blood, as a rule, is more fluid than normal. Localised hæmorrhages
are frequent, especially in the internal organs. The mucous membrane lining the respiratory passages is always catarrhal, and pneumonia may follow as a complication. This form of pneumonia is not to be confounded with true plague pneumonia. Plague pneumonia probably occurs more frequently than is reported, as many cases, where death has been diagnosed as having been due to simple pneumonia, have really been instances of severe and rapid attacks of plague pneumonia. Buboes in the upper half of the body, especially in the neck, indicate a grave prognosis, as also does the occurrence of secondary buboes.

Weichselbaum, Albrecht, and Ghou (Wien. klin. Wochenschr., 1899, No. 50) recognise two clinical forms, the bubonic and the pulmonary (primary plague pneumonia); Maurange (Gaz. hebdo. de méd., Paris, 1899, No. 81) describes three forms, adding to these two a septicæmic type. The Austrian observers were sent to Bombay in 1897 to study the plague in situ, and on their return to Vienna carried out a number of experiments, bearing on the subject, in animals. Their conclusions coincide closely with those already noted. One or two statements made by them, however, may be reproduced. They classify primary plague pneumonia as a lobular type, confluent and involving entire lobes, accompanied by bronchitis; and attribute the secondary forms to the entrance of infectious particles, derived from bubonic inflammations of the tonsils or adjacent lymphatic glands, sucked into the lungs during inspiration. The saliva as well as the sputum contains Bacilli pestis in these forms; which indeed, to a greater or less extent, are common in all ordinary cases of plague.

Maurange regards plague serum, employed within a few hours of attack, as effecting a cure in 50 per cent. of the bubonic and septicaemic cases, but as useless in the pneumonic type.

Zabolotny (Ann. de l'Inst. Pasteur, Paris, November 1899, referred to Centraibl. f. innere Med., Leipzig, 1900, No. 34), as one of a Russian expedition for investigation of the plague, found that plague had been practically endemic for ten years in Eastern Mongolia. Cases of plague pneumonia were unusually common there.

Gotschlich (Ztschr. f. Hyg. u. Infections-krankh, Leipzig, 1899, Bd. xxxii. Heft 3, S. 402) records a most valuable observation. He found in the sputum of a patient, convalescent from an attack of secondary plague pneumonia, virulent plague bacilli up to the seventieth day following the appearance of symptoms of the primary disease; or forty-eight days after the temperature had fallen to normal, and forty-two days after the patient had first been allowed to get out of bed.

In a case of primary plague pneumonia, active plague bacilli could be obtained in the sputum for forty-one days from the beginning of the attack. The infectious property of the sputum was proved upon guinea-pigs.

It follows, therefore, that in pneumonic types of plague, at least, great dangers may exist for several weeks after apparent convalescence, of infection from the bacilli present in the sputum of patients recovering from pulmonary plague-lesions.

Pearse (Lancet, London, 8th April 1899) deals with coincidence of the plague, and other chronic and acute infectious diseases. He believes that, while coexistent attacks of malaria have no deleterious effect upon
the course of plague, and relapsing fever even exercises a beneficial
influence, measles, chicken-pox, smallpox, and tuberculosis, present along
with plague, are of ill omen. Consumptives bear preventive inoculation
badly.

Bruce (Lancet, London, 21st October 1899) states the incubation
stage of plague to be of never less than two, nor more than ten days' 
duration; in the mean, five to six days.

SURGERY.

UNDER THE CHARGE OF
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Surgery of the Pancreas.

Ceecherelli of Parma pointed out that surgical interference was
most developed in relation to cysts, hemorrhage, calculi, and suppurative
or gangrenous pancreatitis. The chief symptoms of pancreatic disease are
loss of flesh, presence of fat in the stools, sugar in the urine, bronze
coloration of the skin, jaundice, and pain. As complete removal of the
organ is incompatible with life, interference is confined to partial extirpa-
tion, preferably of the tail.

Mayo Robson was able to speak from personal experience, hav-
ing operated on forty cases of pancreatic disease. He had devoted
special attention to cancer and pancreatitis. Of cancer he had seen over
fifty cases. Excision can seldom be feasible or justifiable, except in
cases in which the disease is limited to the body or tail of the organ,
and then only when it is caught in an early stage. In fifteen cases he
had operated for the relief of symptoms by cholecystotomy or cholecyst-
enterostomy, and of these nine recovered and lived for some time in
greater comfort. The important fact, however, that some of the cases
operated upon, and thought at the time to be cancer of the head of the
pancreas, but which recovered and are now in perfect health, showing
the tumour to have been chronic interstitial pancreatitis and not cancer,
leads the author to advocate operation in all cases not too far advanced,
especially in young or middle-aged patients, not because much good will
be done if the case be truly cancer, but under the hope that the tumour
may be inflammatory and not malignant.

In discussing pancreatitis, the author draws an instructive parallel
between the inflammatory diseases of the liver, such as infective and
suppurative cholangitis and chronic interstitial hepatitis, and similar
diseases of the pancreas and its duct. He believes he has seen functional
ailments of the pancreas ending in recovery, that would come under the
heading of infective catarrh of the ducts. In the etiology he lays stress