lung is collapsed by a pneumothorax, the other respires as much air as did both together. The cough and expectoration are usually increased immediately after the operation as the result of the expression of the secretions from the lung, and in cases where cavities have been compressed enormous quantities of purulent material are expectorated during and immediately after the operation. It is well to leave the needle in position for a few minutes after the current is turned off, so that a small quantity of gas can be withdrawn if the tendency to syncope is marked or the pain severe. The wound is sealed with collodion and, in order to avoid the escape of the gas into the subcutaneous cellular tissue, a tightly wound roller bandage is laid over the wound in the intercostal space and held in position with a long strip of adhesive plaster. This acts as an intercostal splint, and prevents the escape of the gas, which, without it, is sometimes considerable, extending into the cellular tissue of the neck so as to interfere more or less with respiration and deglutition.

Of the possible accidents that may occur in connection with the operation may be mentioned: 1, gas embolism; 2, wounding of the intercostal vessels; 3, pulmonary hemorrhage from puncture of the lung tissue; and 4, wounding of the pericardium in the event of its being distended.

CASE 1.—Mr. G. E., aged 32, applied for examination, Aug. 25, 1898. His family history is negative. He has coughed more or less during the last five years. The disease began with an attack of acute bronchitis. He has lost little weight. At present he coughs and expectorates yellowish mucopurulent material several times during the day. He has been examined by many physicians, and a diagnosis of tuberculosis has been made by the majority of them. The sputum was found to contain tubercle bacilli in moderate quantity. He was advised to change climate and he used the ordinary antituberculous remedies. Examination of the chest shows the expansion to be good. There is slight dullness over the right apex, râles are heard over the right upper lobe. August 28, tubercle bacilli were found in the sputum. With this history and these physical signs, I prescribed for the patient and advised that he wait developments. I then lost sight of him until Dec. 9, 1898. He then stated that he had gradually grown worse; he coughed a little more and expectorated more freely; had little fever and no night sweats. There was dullness over the apex of the right lung and slightly impaired resonance over the entire upper lobe. Expiration was harsh and prolonged; numerous crepitant râles during inspiration. Bacilli were again found in sputum. Dec. 16, 1898, 115 cubic inches of nitrogen was injected into right pleural cavity; breath-sounds not completely suppressed over upper lobe. Pulse 80; resp. 20; temp. 99 F. December 28, gas almost entirely absorbed; crepitant râles over right apex diminished; has gained one pound, otherwise no change. Feb. 15, 1899, second injection of nitrogen. April 1, weight 137 pounds—an increase of eight pounds since first injection. Very slight expectoration in the morning; no fever; appetite good. There are very few dry râles over right apex; breath-sounds are a little harsh. Patient has been at work during the entire time of treatment.

CASE 2.—Mr. W. S., aged 30, was examined Sept. 1, 1898. There had been no tuberculosis in his family. He has been sick since Christmas, 1897; began then to cough and expectorate, and has gradually grown weaker and has been unable to work since June 1. His weight at present is 129 pounds, normal weight 160. He has high fever and night sweats. Examination revealed dullness, crepitant and submucous râles and signs of cavity in left upper lobe, scattered râles in right upper lobe. Sputum contains great quantities of bacilli.

September 23, 40 cubic inches of nitrogen was injected into the left pleural cavity. There was considerable dyspnea following the operation. October 6, patient states he has gained two pounds since the operation, that he feels stronger and that his appetite is good. He still coughs a great deal at night; night sweats are less severe. October 28, he has gained four and one-half pounds since first examination; has night sweats only occasionally. There are still some signs of cavity in the left upper lobe.

This was a desperate case when treatment was in-

stituted; his pulse at that time was 140; temp. 102.2; respiration 28. Three weeks later this patient developed an acute pneumothorax from rupture of a tuberculous focus and succumbed to the infection of the pleural cavity about two weeks after the accident.

(To be continued.)

PRIMARY TESTICULAR MUMPS.*

BY LANDON B. EDWARDS, M.D.

Professor of Practice of Medicine and Clinical Medicine, University College of Medicine; Physician to Virginia Hospital.

RICHMOND, VA.

So constant is the primary seat of mumps in the parotid or other salivary glands that the disease is remarkably free of other synonyms than parotitis or parotiditis. In practice, however, we are familiar with its metastasis from its usual seat to the testicle in the male, or to the mamma or ovary in the female. But the condition to which this paper refers is rare—so rare indeed, that most text-books make no reference to it. Hence, it is worthy of note that I have met with several cases of *primary testicular mumps*.

My attention was first called to the subject some fifteen or more years ago by a case seen with the late Dr. F. D. Cunningham of Richmond. Other cases of primary testicular mumps occurred during that otherwise ordinary epidemic of parotitis. Verbal reports were made of some of the cases to the Richmond Academy of Medicine, but the records are lost and I am unable to find that other publication of the facts was made. The cases then seen, so far as I recall, were among employees of some of the larger tobacco factories of the city. While details of those are obscured by the lapse of time and the loss of notes, it is remembered that none of the cases referred to could be traced to a prior attack of gonorrhea, local injury or other cause for epididymitis or orchitis. The cases were followed up as to results, but no atrophy nor evidence of impairment of function followed.

An endemic of parotitis prevailed in Richmond during the winter of 1898-99, extending well over into the spring months of this year. During this period, four cases of primary testicular mumps came under my care—all of them since the middle of January, 1899. Three of the four cases were in young men of fairly good health, who were medical students in the University College of Medicine. The fourth case was a young man who boarded in the house with one of these students. Other patients with ordinary epidemic parotitis were in the boarding-houses with these students; but their attacks of parotitis ran the usual course without noticeable incident worthy of record.

In none of the four cases just referred to could the most exacting inquiry elicit the history of impure intercourse, or of recent venereal disease, nor was there history of injury or traumatism about the generative organs. In short, there was no recognizable cause for any disease of the contents of the scrotum—beyond the prevailing influence of epidemic mumps; nor had these patients had a previous attack of parotitis. There was a sameness in the clinical history of these four cases that makes a general description of the disease as it occurred in one a sufficient record for the others.

Chilly sensations running up the back, followed rapidly by rise of temperature—in one case reaching, in a few hours, about 103 F.—marked the onset. Besides

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an almost coincident development of headache and nausea, enlargement, hardness and tenderness of the testicle set in. In three, the left testicle was decidedly more affected than the right; in the fourth case, it was hard to say which testicle was most affected. There were diffused lumbar pains in all the cases, and in one case the pain was so severe and peculiar that varioloid was suggested. In each the testicle was enlarged, hot and painful before the end of the first twenty-four hours after invasion.

During the second and third days after this enlarged, painful, feverish condition of the testicle began, a noticeable amount of swelling developed about the salivary glands—principally the parotids—which were sore on opening the mouth or on pressure from without; but there was no abatement of the testicular trouble. The headache, lumbar pains, fever and nausea continued. The affected testicle continued to increase in size—in one case reaching about three times its normal dimensions, and yet without material involvement of the epididymis, vas deferens, or other structure of the part. By the sixth day, the general signs and symptoms began to abate, and disappeared by the eighth or ninth day, so far as manifestations of the infection were concerned. In a few days more the enlarged tender testicles and the soreness extending up into the abdomen along the course of the spermatic cords gradually abated until recovery occurred. During the course of the disease, there was no urethral discharge, no bladder irritation, no evidence of suppuration anywhere, nor did the involvement of the epididymis leave any sign of permanent change in structure.

While the neck glands became secondarily involved in three of the cases, in only one case were the signs of parotitis at all prominent; and that case would have been spoken of as a mild case of mumps had it not been for the severe primary testicular involvement. In none of the cases were the testicular signs or symptoms modified when the salivary glands became secondarily affected. In each case effort was made, but without effect, to "draw the disease" to the neck glands—as the term is commonly used—by poultices, hot applications, etc.

As to treatment, guaiacol was used in two of the cases reported, without benefit; but phenacetin, with salol and digitalis, relieved much of the discomfort. Tobacco poultices over the testicles, and afterward absorbent cotton wet with 15 to 20 per cent. solutions of ammonium chlorid applied on the scrotum, and rest in bed relieved pain and hastened recovery. Of course, suspensory bandages for the testes, etc., were used. No impairment of function seems to have resulted in any of the cases.

I have referred at such length to these cases of primary testicular mumps because they are rare and do not find sufficient recognition in the books. Such cases occur in some epidemics of parotitis and not in others. Comby¹ noted cases of febrile orchitis without parotitis during an epidemic of mumps. Morton² described other cases under the name of "febris testicularis." Some military surgeons have described cases under the name of "rheumatoid orchitis," "primary infectious orchitis," etc. Kovacs reported two cases of orchitic mumps without parotitis. Laveran admits that orchitis may constitute the only manifestation of mumps. In the epidemic of 1832 at Chateauroux there were cases of orchitis without involvement of the parotid gland. The same was observed during the epidemic in Geneva. Desbarreaux-Bernard reported several cases

of this abnormal form of mumps. During the epidemic of parotitis in Dantzic, of 29 soldiers having orchitis, 19 had no parotid swelling. Rizet, Boyer, Debize, Vidal, Jacob, Sorel, Laveran, Chauvin, Servier, and others have reported similar cases.

SHOCK, HEMORRHAGE AND SEPTICEMIA.*

BY THOS. H. WAGNER, M.D.

HOUSE PHYSICIAN SILVER CROSS HOSPITAL.

JOLIET, ILL.

In tabulating the symptoms of shock and hemorrhage, we usually note the following: An expressionless countenance, pallor, with corresponding coldness of face and mucous membrane, and clammy skin, often slight or profuse sweats, chilly sensations, irregular heart action, with weak, irregular, thready, often imperceptible pulse, and irregular sighing respiration.

These two conditions, shock and hemorrhage, or rather their symptoms, are so intimately associated that I will not take time mentioning the slight variations or the local conditions found in hemorrhage alone.

In the symptoms of septicemia we at first find the essential signs of fever, with often a full, bounding pulse; but later we get the feeble, less regular pulse, sighing respiration, clammy skin with slight or profuse sweats, countenance expressionless, or expressing great concern, the secretions from the bowels and kidneys scanty, and as regards these symptoms they are all due to a vasomotor paralysis, either through direct action on the heart, as from hemorrhage and septicemia, or from a reflex action which is more commonly the cause in shock.

The treatment I recommend is the intravenous injection of normal salt solution, not particularly in shock and hemorrhage, but in septicemia. The subcutaneous injection of this solution is familiar to all, but I am quite certain that the treatment of septicemia by intravenous injection is rare. I never saw it mentioned until an editorial in the *JOURNAL*, Dec. 31, 1898, and acting on the suggestion, I performed the operation, followed by what I consider brilliant results.

The *modus operandi*, which I will explain later, is somewhat different from that used in simple intravenous injection.

A young woman, 29 years of age, came under my observation Feb. 23, 1899, suffering from general septicemia. She gave a history of having had a chill daily for four days previously, undoubtedly septic in character, followed by a high temperature. An hour after I saw her she had another chill, with temperature 102.2. This was at 10 a. m. At 4 p. m. it was 104, at 9:30, 104.2, and at this time I used the solution. One hour afterward her temperature was 103.8, the next morning, 100, later going down to 99.8, but again going up to 100. Two days after the operation, the temperature taken at different times, was 99, 98.2, 99, 98.6, and 100; the following day, 99.4, 99, 99, 98; the next day, 98, 99, 99, and 98.

Going back for a moment to the day of the operation, the temperature gradually increased from 102.2 to 104.2, at which time I operated. It fell almost immediately after the operation. From that time on her temperature did not go above 100.2, and her general condition was also greatly improved. I might add that she had no chill after the operation.

Another case was that of a young man, aged 19, who came under observation March 11, 1899. He had had a chill that morning, and on examination showed

¹ Twentieth Century Practice of Medicine, vol. xiii, p. 582.

² *Ibid.*

*Read before the Will County Medical Society, April 4, 1899.