lately a photograph of a child has been published, in which the outline gave also an idea of the density of the tissues. In my clinic we got good results in the examination of rickets. The bones made scarcely a shadow, giving ocular demonstration of the diagnosis already made of rickets. I don't think, Mr. President, there is any field in the practice of medicine in which the diagnosis can be, if the proper amount of patience is used, so easy, so thorough and so satisfactory.

SEPSIS OF THE NEWBORN.

Read in the Section on Diseases of Children at the Forty-seventh Annual Meeting of the American Medical Association at Atlanta, Georgia, May 5-8, 1896.

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The history of the following case is reported as the text for a few remarks upon sepsis in the newborn, not only because of its rarity, but because of the interest attached to the case in connection with its etiology.

Baby T. was born on February 1, 1896, of a healthy primiparous mother after a normal though rather tedious labor which had to be terminated by forceps. The child was a male weighing about seven pounds, cried well and was quite vigorous.

The mother had no vaginal discharge before labor, but a vaginal douche of 1-2,000 bichlorid of mercury was given her upon the advent of the first pain, none were given afterward. Her puerperium was perfectly normal and afebrile.

As soon as the head was born the eyes were wiped and the face was washed, the first bath being given some hours later. The cord was tied with a piece of silk from a skein which had been used the day before in an ovariectomy and some of the same was used the next day in an abdominal operation without further preparation. After the first bath the cord was dressed with talcum powder and wrapped in absorbent cotton.

During the first three days nothing abnormal was noted with the child, it had a normal temperature, nursed well though apparently not satisfied, slept well and had normal movements. On the fourth day a temperature was reported of 101.4 degrees in the morning at 6 o'clock, and it had risen to 104 degrees by noon. I was asked to see the case at this time by the attending physician, Dr. L. S. McMurtry, by whose courtesy I report it now. It was decided that the temperature was a starvation one and that artificial feeding was indicated; it was accordingly put upon cow's milk, well diluted, to supplement each nursing, temporarily, as the breasts were at this time beginning to secrete. This reduced the temperature in five hours to 100.6 degrees, and the next day the temperature was normal and the child seemed as well as usual. The cord dropped the next day, the fifth, leaving a moist base, which was treated aseptically and dressed with talcum powder. The next day the temperature rose to 102.4 degrees and the child was reported as listless and slow about nursing. I was asked to see the child again, at this time and on close examination found a retracted umbilicus which, on depressing the edges, was found to contain about twenty drops of pus, this when wiped away showed the base or stump of the cord to be fungous in character. The child did not stand manipulation of the parts

well, pain being caused when they were cleansed, and there was noted slight distention of the abdomen. After thorough cleansing of the navel with a bichlorid of mercury solution, the fungous navel was touched with a twenty grain to the ounce solution of nitrate of silver and a powdered boracic acid dressing applied. This dressing was renewed twice daily and the silver solution used as before.

The progress of the patient from this time to its death, three days later, is of no particular interest save that the temperature rose continuously and steadily from an initial one of 102.4 to 107 degrees a few hours before its death. Baths would reduce this a degree or so, but it would rise again in a few hours. It refused to nurse and was with difficulty fed breast milk, which had been pressed out for feeding with a medicine dropper. The day before its death it had passed very little urine and had several movements, which were composed almost entirely of mucus. The bowels were irrigated with plain water which regulated this condition to a degree and also increased the amount of urine voided. On the day it died the skin was very hot and dry and it was put in a hot air bath, but this caused so much prostration that it was removed and stimulation kept up to the time of its death. A few hours before this occurred its hands and feet were noticed to become a purplish color, perfectly cold and this condition had extended to the wrists and nearly to the knees before death. The abdomen was much distended and tender, the navel moist and the granulation tissue covered with pus, though none could be forced from the vessels by pressure upon the abdominal wall.

This case is of particular interest because of the following facts: The child was born of a healthy mother who had been in the hospital under the daily observation of the physician and nurses for nearly one month before her confinement; the labor occurred under the most carefully prepared aseptic surroundings, in a hospital where a great deal of abdominal surgery is done and no deaths had occurred in more than a year, and that one in another part of the building; it was the first case of obstetrics which had ever been at the hospital; the mother had a perfectly normal and uneventful convalescence and had no vaginal discharge before labor; the patient had an experienced trained nurse, on special duty, in charge and more than the usual care was taken with the dressing of the cord, careful bathing and talcum powder being used. The question has arisen "Where did the infection come from which caused this child's death?" That it occurred through the navel there can be no doubt.

The literature of sepsis of the newborn is very meagre but a number of cases have been reported. The following routes for infection have been mentioned. The umbilical cord and its stump are the most frequent points of infection; among others mentioned by Brothers are the following: Accidental injuries or operations with unclean instruments; mammary abscess; tongue tie or circumcision; abrasions of the buccal mucous membrane, or slight injuries to the genitals or anus; septicemia of the mother during intra-uterine life; premature rupture of the membranes, putrefaction of the liquor amnii and aspiration of this by the child, causing a septic pneumonia; a violent vaginitis of the mother acquired during the last weeks of pregnancy with premature rupture of the membranes, and septic poisons trans-

mitted from the mother, by means of her milk, when she has septicemia following labor.

Jacobi mentions the gastro-intestinal tract as a frequent site for infection, but in his writings, decidedly more prominence is given the umbilicus and its care as a means of prevention of sepsis. The pus of an ophtho-mo-blennorrhoea or the decomposing lochial discharge, he also mentions as causes.

In the case reported all of these sources of infection can be eliminated save the umbilicus. There were no operations done upon the child, the buccal mucous membrane was normal, the mother at no time had symptoms of sepsis, a vaginitis, or decomposing lochial discharge, and frequent examination of the lungs of the child failed to reveal any lesion.

The time of infection in the case can not be decided, but that it did not occur at the time of tying the cord and its first dressing is certain. There was no septic condition existing in the cord before it separated, as it mummified rapidly and was perfectly dry throughout after the separation. It most likely occurred after it became detached, through the fungous navel left, though extra precautions were taken in its care. A possible cause, perhaps, was by septic matter being carried through a wet napkin by capillarity, from the alvine evacuations. It is a common complaint of nurses that boy babies are with much more difficulty kept dry, on account of the napkins being wet high up, thus soiling the bands and cord dressings.

It does seem queer, however, that sepsis should

have existed in this case, in which every attention was paid to the details of asepsis and antisepsis in the lying-in-room, especially so when we think how common it is for no dressing to be applied to the cords of children of the poorer classes, or if one is applied it consists of a greased cloth, after which gangrene is the more apt to occur, or simply a rag with a hole burned in it, with ashes or soot as the drying powder.

However, the occurrence of sepsis in one case, where every care has been taken to prevent it, should not encourage us to relax our vigilance in preventive treatment. The treatment is still mainly preventive, and in the majority of cases, sepsis can be prevented. In a series of 222 cases at the Sloane Maternity Hospital, New York, personally seen by the writer, no case of sepsis in the newborn occurred and no trouble with the navel. The possibility of its occurrence, however, should always be kept before us, careful sterilization of ligatures and instruments used in severing the cord should be had, as well as of the hands before this is done. The ideal ligature is the rubber one, and the difficulty has always been in obtaining a method of applying, but in the ingenious instrument devised by Dr. A. C. Kellogg, which I take pleasure in exhibiting, with which a small rubber ring is applied to the cord, all danger of sepsis from the primary ligature is obviated because of its ready sterilization, and hemorrhage simply can not occur.

The after-care of the cord is important, there should be a separate bed for mother and child, careful cleansing of the hands before bathing the child, which

should always be done before the mother is attended to, the avoidance of fatty applications to the cord and the use of drying powders to facilitate the mummification, a very good formula being salicylic acid and pulverized starch, one part to eight.

The care of the cord is of less importance than the care of the stump; every detail in the treatment of any surgical wound should be observed here. Should there develop an omphalitis, gangrene of the umbilicus, an arteritis or phlebitis, the most active stimulation is indicated with prompt attention to the proper cleansing and antiseptic treatment of the stump, the only precaution being the avoidance of carbolic acid as an application. The symptoms of them all are more or less similar, local appearance of the inflammation at the umbilicus, it being generally bathed in pus; peritonitis is always present to a greater or less degree, also pain and tenderness especially during the bath, and a septic temperature.

However, there may be no symptoms, the condition being recognized only at the autopsy table.

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DISCUSSION.

Dr. J. A. WORK, Elkhart, Ind.—What substance do you use on the cord as dressing? Answer: Cotton.

Dr. W. B. PARKS, Atlanta—I would like to ask the Doctor if it would not be well, in the large cords, to make a little massage and lessen the size of the cord before severing it. That can be done without any injury, I think, if you dress the cord near the child and manipulate outward. By a little compression in this way, you can lessen the edematous condition. I have done that myself quite successfully in a few cases. I never like to tie these large cords for fear of there being too much to be absorbed.

Dr. A. C. COTTON, Chairman—The advantage claimed for the rubber is its constant elasticity gradually displacing the Wharton's jelly.

Dr. HATCH—I have never lost a child under those conditions in my entire practice. It has been my practice during the last ten years, not to sever the cord until the placenta is born, and since I have adopted this method have had better success with the children and they get along better. I do that uniformly and so far as having sepsis is concerned I have for a great number of years used thoroughly sterilized silk in tying the cord. I can see the advantage of this band. Last spring I tied one of those large cords and thought I had tied it thoroughly, and imagine my surprise when a few hours afterward I was sent for and it was said the baby was bleeding to death. I can readily see the constant pressure of the elastic band would have adapted itself to the cord as the edema diminished. The hemorrhage in this case was due to the edema leaving the cord, allowing the ligature to slip off.

Dr. GRAY—I have been in the habit of doubling a small rubber band three or four times and slipping it over the cord. I have done that several times when there was considerable jelly of Wharton, with good results.

Dr. J. H. ROSS—In the country where I practice, I think it is the custom to use almost any substance at hand for ligature. I prescribe flax or cotton thread. But I invariably ligate the cord before I cut it off, and it occurs to me now that perhaps the chances of infection would be lessened by the ligation being made before the cutting is done. We have not been using, in country districts, antisepsis about the cord and I do not remember a single adverse occurrence in the history of many hundreds of cases.

Dr. A. C. COTTON, Chicago—Well, we have tied the cord with almost everything. I have tied it with shoestring and with a hair string from the head of the woman a good many

years ago, and no ill results ever followed it. The only case I have ever had of infection from the navel was long after I had been connected with a hospital and had been taught surgical sepsis and practiced it. In my experience and observation sepsis from the navel is a rare thing in our city, and midwives take no aseptic precaution at all in many instances. That it should follow in the practice of men who observe aseptic precautions religiously and not occur in the practice of people who do not know the meaning of the word "asepsis" is a mystery to me. The discharges ascending the napkin by capillary attraction, is an argument that has been used by myself, as those will remember who heard me at Baltimore and the Illinois State Medical Society last year. I have substituted an absorptive pad, making the diaper simply a key bandage to hold the pad in place, the pad being made of such material as to absorb readily, so the outer retention band is not wet at all.

Dr. HENRY TULEY, Louisville, Ky.—In the case I have just related the enlarged cord extended fully five inches directly from the navel of the child and it would have been impossible to strip this so as to get a good place to tie the ligature. That case was used as an argument for the rubber ring. In the series of 272 cases there were some twenty or thirty cords which bled secondarily, after the tying of the ligature. In some very fat cords hemorrhage would occur. I think this case stands as a unique one and one which I can not fully explain as to the cause of infection. Every precaution possible was taken with the case, because it was a patient recommended to Dr. McMurtry by a friend in Glasgow, and under that recommendation it was with the greatest care the case was watched. Without any further preparation the Doctor used the ligatures the next day in an abdominal operation. But still that possible cause of infection should not be forgotten. I think it does sometimes occur in that way. I was approached last year by a prominent professor in one of our colleges in Louisville and he said: "What are you going to say about the umbilical cord?" I detailed to him the case I suggested. He said: "That is all a mistake. Just recommend it be left alone entirely; just turn it loose and it will take care of itself." To my personal knowledge this professor has had several deaths in the newborn, and I think if he would examine them carefully, get an autopsy, he would find the cause to be sepsis. We know sepsis occurs most frequently from the navel.

CHOREA.

Read in the Section on Diseases of Children, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY HENRY HATCH, M.D.

QUINCY, ILL.

In discussing the subject of chorea I am well aware that it may, at first thought, seem a dry subject to you. But in bringing up this subject it is that I may awaken new life, and bring forth new ideas, and thereby get a more tangible and satisfactory understanding of the etiology and pathology of this very troublesome disease. Troublesome, not alone to the patient and friends, but troublesome as well to the physician, on account of the tenacity with which it holds to its victim. No disease causes more anxiety than this disease, chorea, for it is often hard to convince an anxious mother, when her child is never still on account of the violent nervous movements and excessive agitations, that it is not very ill, and that you do not expect a serious outcome.

To launch out in a new channel may cause you to exclaim, mentally, "Another needless exploring expedition setting out on the pathless sea of chorea," with no definite port in view, and with an uncertainty regarding the existence of such a haven.

Chorea has been and is one of the pathologic dumping grounds of the medical world; and many a man has spent tireless hours in medical research, to find a remedy which will relieve this troublesome disorder. In this space the theorist throws his theory; the pathologist his odds and ends; the moralist adds a few of his trite sayings; and as a result there is a stupendous wilderness of unknown depth and uncer-

tain quantity. No one has penetrated successfully this wilderness; many have tried, and if no other good has been done, the ground has been almost covered with their failures; so that before long we will be able to traverse the entire field by passing from one failure to another. Each man can go a little farther than his predecessor, by using as stepping stones the perished efforts of those who have gone before.

The term chorea, coming from the Greek word, chorea, meaning a dance, has been handed down from the middle ages. About the fifteenth century England was overrun with dancing, or shaking fanatics; many of whom were sent to prison, as having the devil within them. People of seemingly deep religious desires and tendencies were afflicted, for they looked upon it as an affliction and a direct visitation for sins, with an unaccountable dancing, jerking, shaking, or muscle tremor of some sort; this was purely psychic. During the fifteenth century the city of Strasburg had so much of the trouble that the magistrates ordered the afflicted ones to the chapel of Saint Vitus, to do penance, and to pray for relief. Here is where the term "St. Vitus dance" probably originated. It may be of interest to us that St. Vitus was a Sicilian, and a pupil of St. Modestus; both suffering martyrdom as Christians under the persecutions of Diocletian, in the year three hundred, thus gaining their canonization. St. Vitus, however, does not hold the undisputed claim to the name of the disease, for in other parts of Europe it is known as "St. Modestus' dance," "St. John's dance" and "St. Anthony's dance." Each saint was supposed to have curative measures in his keeping. Many other terms have, at various times, been applied to it. One old author speaks of it as melancholia saltans, saltare meaning "to dance." Another as paralysis vacillans. Another as ballismus, from the word signifying "to leap." Again it is known as epilepsia saltatoria; as orchestromania, or the dancing madness. These terms all relate to the psychic disturbances of hysteric character.

Chorea proper, or Sydenham's chorea, is the disease as we recognize it to-day; while the Germans make two classes of it—chorea minor (our chorea) and chorea magna, hysteric manifestations, some of which simulate true chorea.

The disease is preëminently one of early life. Dr. Stephen Mackenzie has a record of 439 cases, with the following percentages: Thirty-four per cent. developed between the ages of 5 and 10 years; forty-three per cent. between 10 and 15; sixteen per cent. between 15 and 20 years; with the largest general percentage for the thirteenth year. See reports 513 cases, and 453 of them between the ages of 6 and 15. Sinkler 282 cases, with 217 of them between 6 and 15 years of age. There is on record one case in a patient 78 years old. My own experience gives me a record of forty-six cases, the oldest of which was 40 years, and a man. Most of my cases have been before the period of the seventeenth year; and almost all of them have been females. The records of the same authors show that chorea, while a disease of early life, is most frequently a disease of early female life, as my own experience has shown. It follows closely, or closely precedes the puberal epoch in the girl. Gower, who has made a deep study of the subject and who has a record of more than one thousand cases, gives but 365 cases found in the male. Sachs, with his list of seventy cases, found twenty-one males. It may be the more