

blood pressure was being taken, it was observed that, between 150 and 160 mm., only one half of the beats could be heard; there was typical alternating pulse. The heart showed tick-tack rhythm. The chart shows the condition well and the variation in the pulse when digitalis was administered.

December 9, the highest systolic pressure was 170 mm. One half of the beats came through at this height; all of the beats came through at 160 mm.; all sounds disappeared at 130 mm.; there was definite tick-tack rhythm. On that day the patient was given tincture of digitalis, 15 minims every four hours. Twenty-four hours later the blood pressure went to 180 mm., and all beats went through at this point; the alternation had entirely disappeared; all sounds were gone at 140 mm.; the tick-tack rhythm had disappeared; the second sound was quite sharply accentuated.

December 11, 12 and 13 the blood pressure remained at 180 mm., with no alternating quality present. December 14, the dose of digitalis was reduced to 5 minims every four hours. December 15, there was slight alternating and two days later the condition was marked. The highest systolic pressure was 178 mm., and all beats came through at 160 mm. December 18, the patient was again put on 15 minims of the digitalis. The blood pressure promptly rose and showed no alternation. Two days later the dosage was again reduced to 5 minims, and pulsus alternans promptly returned.

The patient left the hospital, December 26, much improved, but still dyspneic on slight exertion. He soon began moderate work. His doctor reports that the decompensation rapidly returned. By March 1, 1915, there was marked edema of the extremities, with extreme ascites. The patient died March 28, 1915.

CONGENITAL ABSENCE OF PATELLAE

AND OTHER PATELLAR ANOMALIES IN THREE
MEMBERS OF SAME FAMILY

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Although a number of observers have reported cases of congenital absence of patellae, yet out of six standard textbooks of anatomy consulted, only one (Pier-sol's) calls attention to this anomaly. It says:

Congenital absence of the patella on one or both sides has been noted in a number of instances, and has in some cases been observed in several members of the same family. The functional disability was slight or altogether unnoticeable.

These observations agree perfectly with the findings in cases here presented.

Another anomaly which exists in two of the three cases is an incomplete development of the thumb nails. The two conditions, namely, absence of patellae and absence of thumb nails, are strangely correlated.

Little¹ collected eighteen cases in a family of four generations in which there were no patellae and no thumb nails. He does not state whether the two conditions coexisted in all the cases or whether some had one and some the other, or how many had both anomalies. It is, perhaps, reasonable to suppose that those conditions existed singly in certain individuals. Heredity is certainly a strong factor in these cases. The three cases in this report show plainly the influence of heredity.

CASE 1.—Mrs. W., aged 33, born in France, had unimportant family history except that her mother had no thumb nails. The patient had had rickets in infancy; otherwise

the personal history was uneventful until about ten years ago, when a heart lesion was discovered. The lesion is still present and consists of a mitral regurgitation. Except for the murmur, the patient shows no other symptoms. The thumb nails are practically absent. Some horny tissue is present right near the matrix. The right patella is about half the normal size. The left patella is no larger and is displaced, but the latter condition was due to an accident.

CASE 2.—Robert W., aged 10, son of Mrs. W., Case 1, also born in France, had rickets, but no other conditions that would have any bearing on this case. While looking over the boy for an eruption which was diagnosed measles, my attention was drawn to the peculiarly shaped knee. The anterior aspect was flat and looked very broad in proportion. On close examination no patellae could be felt. This was later confirmed by roentgenoscopy. The nails of the thumbs were normal.

CASE 3.—Henriette W., aged 4 years, born in Chicago, daughter of Mrs. W., Case 1, and sister of Robert W., Case 2, was a marantic baby and has still symptoms of pronounced rickets. There were no other conditions relevant to the case. The knees were examined on account of the findings in her brother and with the same result, that no patellae could be found. It was also verified by roentgenoscopy. The thumb nails are partly developed.

The patella is known as the largest sesamoid bone in the body. The anterior surface is covered by the fibers of the quadriceps extensor tendon, which serves as its periosteum. The development begins in the third fetal month as a cartilaginous deposit. Ossification begins between the second and fifth year. The bone is not fully formed till after puberty or even later. The function of the patella, according to Lickley,² is as follows:

The patella forms a more suitable pulley for movements around the condyle than the tendon itself. A minor advantage is of keeping the upper end of the patellar ligament in a plane well in front of the axis of flexion and extension. There is also a defensive function. The most important function is to supply the quadriceps extensor muscles with a lever on which to act.

As far as can be ascertained by physical examination and observation by physician and individual, no inconvenience is suffered on account of absence of the patellae. Being mindful of the late and possibly delayed ossification, Dr. Van Horn, who has done the excellent Roentgen-ray work in these cases, used especially soft tubes so as to outline any cartilaginous deposits if there were any, and at the same time to see the course of the tendon. The latter could be easily traced.

It seems difficult to explain these anomalies first singly, that is, the absence of patellae or thumb nails, and second, the relationship of the two anomalies.

In the three cases here presented there seems to be present one common condition, and that is rickets. Whether or not that can be assigned as the cause would be difficult to say. Perhaps an intra-uterine rickets with or without postnatal rickets is the cause of these peculiar phenomena.

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To Facilitate Expulsion of the Placenta.—I have often experienced the ease with which the placenta presents itself at the vaginal orifice on requesting the patient to flex the knees and raise the hips slightly from the bed—of course the fundus is firmly grasped before and during the procedure.—J. T. LELAND, M. D., Herman, Minn.

1. Little, quoted by Thorndike: *Tr. Am. Orthop. Assn.*, Philadelphia, 1898.

2. Lickley, J. Dunlop: *Jour. Anat. and Physiol.*, 1904, xxxviii.