

of a year he walked quite well with crutches, and had only a half-inch shortening by the most careful measurement.

He used his crutches for about eighteen months, and, afterward, a cane for eight weeks, but for the past ten years has not used anything, walking without any limp.

He can run and dance as well as any boy of his age; in fact, he won a pair of skates in a skating-match on the Central Park pond, in December, 1869.

The most remarkable feature of the case is, that the limb continues to grow in length as fast as the other, and there is now scarcely a half-inch difference in the length of the two by the most careful measurement.

Figures 179, 180, 181, and 182, from photographs, showing the result of the operation as well as the bone removed; represent the length very accurately, as well as the ability to flex the limb,

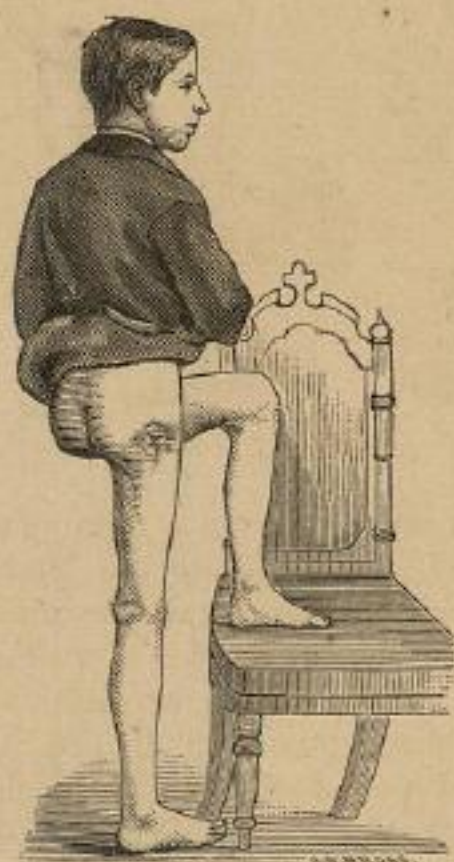


FIG. 182.

and also to bear the entire weight of the body upon it. I think it can fairly be called the most successful case of reproduction of the hip-joint that has as yet been recorded.

CASE.—Bernard Storch, aged nine. (*See* Table, No. 34.) Four years ago had a fall, since which time he has been troubled with his hip. Has been setoned and blistered, without benefit. Condition, February 25, 1871: Greatly emaciated, limb shortened two inches, adducted, and nearly straight. A large opening, over trochanter major, has been discharging freely for the past five weeks.

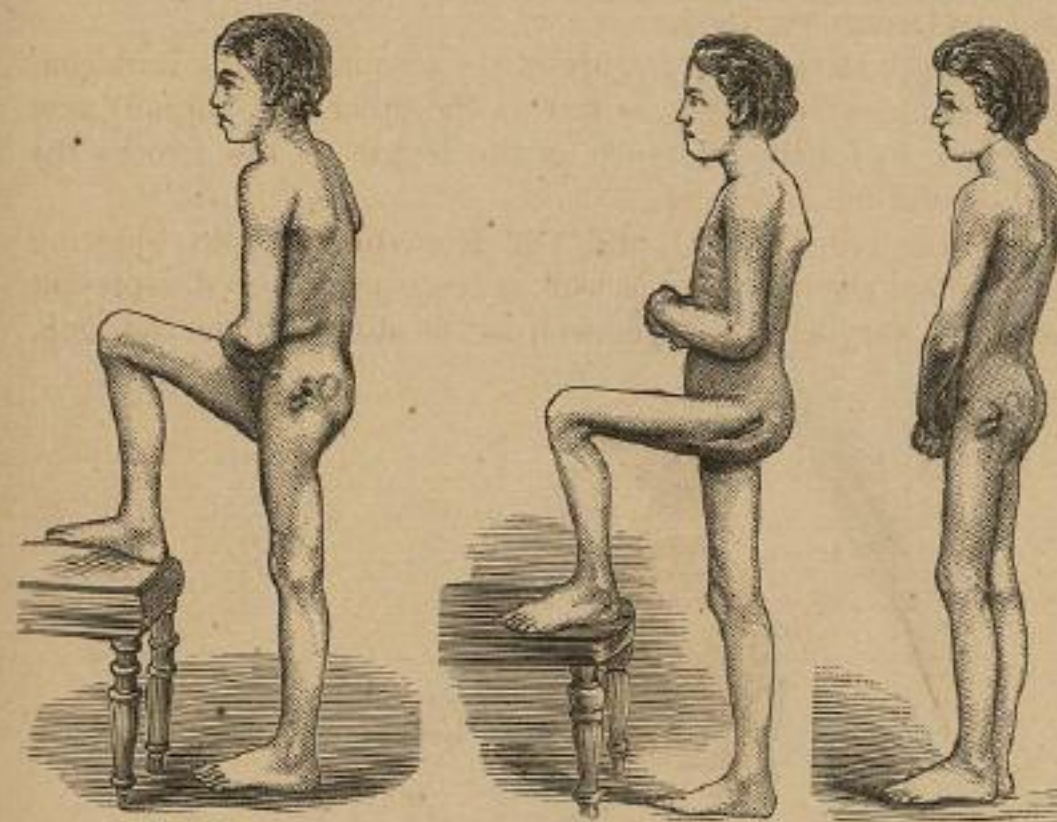


FIG. 183.

FIG. 184.

FIG. 185.

Finger passes readily into a deep sinus running around the under surface of the neck of the bone into the joint. The operation was performed by slightly enlarging the external opening at its upper border, and carrying the incision down through the periosteum, over the centre of the trochanter major, for about an inch and a half; the periosteum was then divided at right angles to the first incision, and peeled off with its attachments, the joint freely opened, and the head luxated from the acetabulum by strong adduction, and peeled off from the internal layer of periosteum, and sawed off just above the trochanter minor; the upper rim of the acetabulum was absorbed, and the head of the bone rested upon the dorsum illi, but surrounded by its capsular ligament. Four pieces of necrosed bone, as seen in Fig. 186, were



removed from the acetabulum, which was perforated. Wound dressed in usual way, and boy placed in wire cuirass.

The history presents no points of especial interest.

He can bear his entire weight upon this limb, as seen in Fig. 183, can flex it to a right angle, as seen in Fig. 184, and can stand with the limbs parallel, Fig. 185. There is a shortening of a quarter of an inch. Fig. 186 is from a photograph of the bones removed.

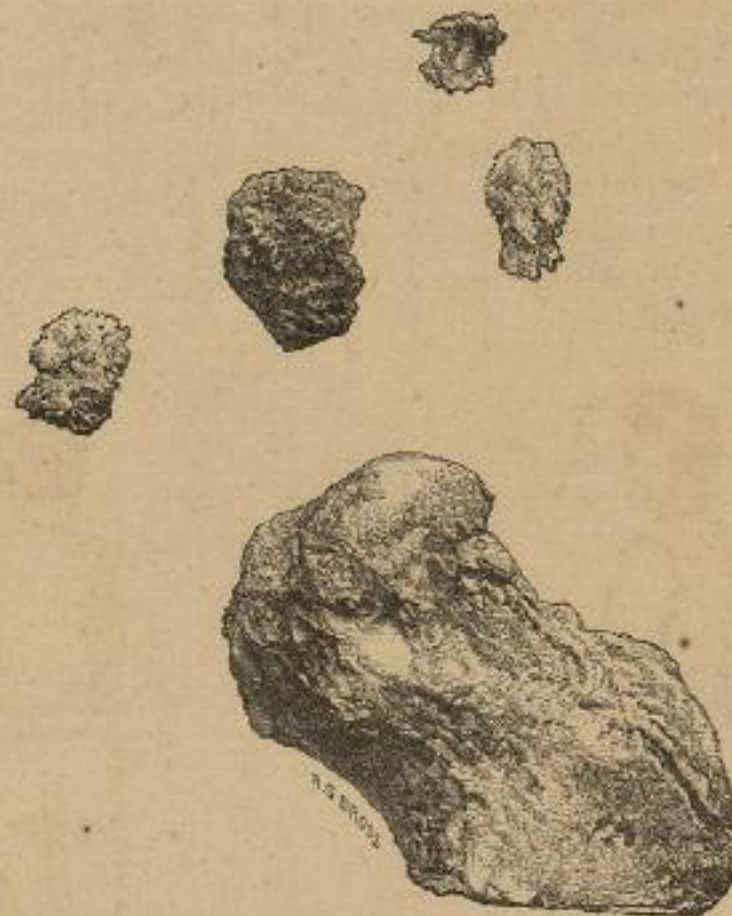


FIG. 186.

CASE.—M. D. Field, aged fourteen years and six months. (See Table, No. 28.) Sixteen weeks previous was struck upon right trochanter, producing great pain; the next day took violent exercise and was exposed to cold. This was followed by a chill and great pain in hip-joint; he has not been out of bed since.

A large abscess formed in front of trochanter major, which was opened. Condition December 22, 1867: Emaciated almost to a skeleton, very greatly distorted, nine fistulous openings

around the hip, and the upper part of the thigh distended with pus. *Trochanter upon the dorsum of the ilium.* This is the only case of dislocation that I have seen in all my operations, and this took place a few days before the operation, while trying to turn him in his bed.

The head, neck, and four inches of the shaft of the femur, was removed in the usual way.

The head of the femur was entirely out of the acetabulum, which was not diseased except at its upper and outer border. The entire femur was surrounded by an involucrum of new bone nearly one-eighth of an inch thick. The wound was stuffed with oakum, and extension applied.

The boy improved rapidly, but, the extension having been removed, he recovered with nearly four inches shortening, which is supplied by a high-heeled boot, and with which he walks remarkably well.



FIG. 184.



FIG. 185.

He was not seen by me from the time of the operation until November 25, 1869, when the photographs (Figs. 187 and 188) were taken. Fig. 189 is a representation of the bone as removed,



without having been cleaned or washed, showing that the periosteum was left entire.

I saw Mr. Field in August, 1875, and found the motions of his joint very materially increased since the photograph was



FIG. 189.

taken, from which Fig. 187 was engraved. The leg remains four inches shorter than the other. This is the greatest amount of shortening which has occurred in any of my cases of exsection, and I attribute it to the fact that extension was not continued during the progress of treatment.

The two following cases are added to show that favorable results may sometimes occur, even under the most apparently unpromising circumstances:

CASE. *Exsection of Hip-Joint; Head and Neck absorbed; Acetabulum carious; Section of the Femur One Inch below Trochanter Minor; Recovery, with almost Perfect Form and Motion.*—In May, 1861, I was requested, by Dr. Wm. H. Church, to see a case in consultation of hip-disease, in Fifty-fourth Street, near Eighth Avenue. We found a girl (Annetta Schletting),

supposed to be about ten years of age; her father and mother were dead, but the cause of death we were unable to ascertain. She was living with some poor relatives, who gave us the following history: Eighteen months before she had fallen from a wagon, striking on a curbstone, bruising her right hip and knee very badly. She was confined to her bed some days, then got about to her play as usual, but was always a little lame in that limb, and worse early in the morning, or when commencing to move, after some hours of rest.

About three months after the accident she became much worse; her leg began to "draw up, and turn out," and the pain was so intense that they were compelled to give her large doses of opium to keep her quiet. Her screams at night, every time she fell asleep, were so violent as "to frighten everybody in the house."

This lasted for nearly a year, when suddenly one night the leg twisted in across the other foot, and a large swelling came on the outside of the hip.

Since that time she has been much more free from pain; but her leg has been fixed in that position, and still remains so. When lying on her back, she requires two or three pillows under her well limb, which is placed behind the diseased one, and the outer portion of the diseased foot is firmly held between the great-toe and its adjoining one of the well foot. In this position, and at perfect rest, she is comparatively comfortable. The least attempt at movement of the diseased limb produces the most intense torture.

About three months after the limb assumed this position the large swelling on her thigh broke in three separate places, from each of which a copious discharge of pus has continued up to the present time.

A photograph of the girl was taken previous to the operation, and it will be observed how she bears almost her entire weight by her hands upon the table, and how firmly she grasps the diseased limb with the well one, for the purpose of preventing motion in it. (See Fig. 190).

On the 8th of May, 1861, assisted by Dr. W. H. Church, I performed exsection of the hip in the usual way by a curved incision over the trochanter major and through the periosteum, which was very much thickened. The neck of the femur was entirely ab-



sorbed, and the remains of the head of the bone were lying loose in the acetabulum, which was carious but not perforated.



FIG. 190.



FIG. 191.

Very little blood was lost during the operation, and no vessels were tied. She was dressed in the wire breeches in the usual way, as previously described.

The shanty in which she resided, with all the surroundings of extreme poverty and foul air, gave very little prospect of a favorable result. I therefore moved her out in the yard in the open air, under a temporary tent, where she was kept most of the time, day and night, except when a severe storm occurred.

From the day of the operation she improved most rapidly, and in less than three months the wounds had healed entirely, with less than a half-inch shortening of the femur. In six months from the operation she walked well without any support, motions of the joint almost as free as normal, and her figure nearly perfect, as seen in Fig. 191, from photograph by O'Neil.

CASE. *Excision of Hip-Joint; Perforation of Acetabulum; Extensive Intrapelvic Abscess; Fracture of Femur at Time of Operation; Recovery, with Good Motion and Two Inches Shortening.*—Matilda Hillory, aged fourteen, Burlington, Iowa, July 3, 1862. Two years previous pushed over by another girl, striking

upon her hip; for three weeks after gave her great pain when she walked. Pain gradually increased. Confined to her bed for one year. Six months after commencement of trouble, pain became much worse at night, with frequent spasms. The limb was elongated, abducted, and strongly rotated outward, and could not be brought to its normal position. Subsequently the hip began to swell, and, six months since, the abscess broke, and at present there are four sinuses discharging profusely. Since the breaking of the abscess, the patient has been much more free from pain, and the limb is shorter, strongly adducted, and fixed against the opposite limb, as seen in Fig. 192. One of the sinuses, close by the rectum and between it and the tuber ischii, discharged profusely whenever she assumed the erect position; in fact, the pus ran down her leg and collected on the floor while she was standing for her photograph.

July 3, 1862.—Assisted by Drs. Mason and Shaw, I excised the hip-joint, by making an incision over the posterior border of the trochanter major, the incision slightly curving backward and going through the periosteum directly down to the bone; the joint was freely and easily opened, but it was found impossible to disarticulate the femur. In using force the femur was broken about two inches above its lower extremity.



FIG. 192.

The finger could be easily passed around the carious bone and into the joint, which was filled with spiculae of bone. The neck of the femur had been entirely absorbed and yet the shaft seemed permanently fixed in the acetabulum, and the limb could not be flexed or brought across the opposite one. I therefore passed a chain-saw around the femur and sawed it off, just above the trochanter minor. The upper fragment was then readily picked out with the dressing-forceps. The difficulty of disarticulation was then found to be due to the fact that upon the upper end of the femur was a projection three-quarters of an inch in length and over half an inch in diameter at its base, which



protruded through an opening in the upper wall of the acetabulum. (See Fig. 193.) The only remnant of the caput femoris was a shell of bone which was picked out with the forceps. (See Fig. 194.)

At the insertion of the ligamentum teres was a flattened surface about the size of a ten-cent piece, which was eroded and carious; and in the acetabulum a similar place at the point of contact of the two surfaces. This latter I scraped; an opening was found in the acetabulum which would readily admit the fore-finger. The internal periosteum had not been perforated, but was separated from the bone, and produced the pouting in the



FIG. 193.



FIG. 194.

pelvis which had been detected by rectal examination previous to the operation. This portion of the acetabulum was carefully chipped off down to the attachment of the internal periosteum. The wound was thoroughly washed with warm water, dressed with Peruvian balsam and oakum, and the patient placed in the wire cuirass, which answered the double purpose of sustaining the hip, and at the same time providing one of the best appliances for the treatment of a fractured femur.

It is hardly worth while to give the daily details of treatment, as nothing unusual occurred, although the case had been complicated by the fracture. The wounds entirely healed by the 1st of October, except the sinus near the anus, which continued to discharge a small amount of healthy pus. She could bear almost her entire weight upon the limb, and had remarkably free voluntary motion of the joint. The limb was two inches shorter than the other.

She left for her home in the West, November 20, 1862, wearing a long extension-splint, in almost robust health, having gained nearly twenty pounds in weight since the operation.

In 1866 she sent me her photograph, from which Fig. 195 is

engraved, and in the letter accompanying the same she says: "My health is perfect, my limb is as good as the other, and has been for two years past, and, with less than an inch on the heel and sole of my shoe, I can run and dance as well as any girl in Iowa."

When this patient was brought to me, I gave a very unfavorable prognosis of the case; her extreme emaciation, the extensive intrapelvic abscess, which was detected by the rectal examination, rendered it, in my judgment, almost certain that no operation would be successful, and had she been a resident of this city I would not have performed it. Her limbs were in so awkward a position, and her sufferings had been so great while she was being brought from her home, that I consented to perform the operation merely for the purpose of improving her position and enabling me to place



FIG. 195.

her in the "wire cuirass" so that she could be taken home with less suffering than she had endured during her journey here. This was distinctly stated to the parents and the physicians present, before the operation was performed. The unfortunate fracture of her femur, which occurred at the time of the operation, compelled me to keep her under treatment, and the result proved that my prognosis was not correct.

The following table of all my cases of exsection of the hip-joint, as well as the synopsis of the same, has been compiled from my note and case books by my son, Dr. Lewis Hall Sayre:



EXSECTIONS OF HEAD OF FEMUR, PERFORMED BY LEWIS A. SAYRE, M. D.

Name and Address.	Age.	Sex.	Date of Operation.	Case and Duration.	Family History and Previous Condition of Patient.	Condition at Time of Operation.	Extent of Bone removed, and Condition of Parts involved.	Plan of After-Treatment.	Result.	Sort- out, inches.	Last heard from.	Remarks.
1. Gulon, Ellen, 297 5th St., New York.	9	F.	March 20, 1854.	Fall 13 months previous.	Good. Perfect previous to accident.	Great prostration, chills, profuse night-sweats, large abscess, numerous sinusses.	Below trochanters, acetabulum serrated, upper margin acetabulum absorbed.	Extension by weight and pulley.	Perfect recovery with motion. (See Fig. 118.)	X	Dec., 1855.	Called with her husband to make arrangements for confinement. Has been married six months.
2. Raymond, 152 Hicks St., Brooklyn.	11	M.	October 20, 1850.	6 months.	Good.	In articulo-mortis; intense pain; sinusses, abscesses; leg flexed on the thigh; no discharge. Four feet and only weighed forty pounds.	Femur below trochanters; acetabulum perforated; large portions of bone removed; internal perforation. Four feet and only weighed forty pounds.	Extension by weight and pulley.	Died in eight days, from exhaustion.			Operation not expected to be successful, but done to make patient more comfortable.
3. John Medour.	16	M.	March, 1860.	Fall 11 years previous. Fell into a stream 8 years ago.	Always remarkably healthy, and active. Healthy family. Mother died of phthisis.	Trochanter on dorsum illi, 14 inch flexed. Knee flexed. Several sinusses.	Head separated. Femur sawed below trochanter without, acetabulum perforated.	Wire-breeches.	Much relieved, but died last of May from exhaustion, disease still progressing.			Post-Mortem.—Found os impuncta, cartilag., acetabulum perforated and broken into three pieces (probably fractured at time of fall into stream), femur rounded off by efforts of nature, and attached to healthy portions of acetabulum by fibrous tissue. Abscess on inner surface of ilium communicating with fissure in acetabulum.

4. McClure, 1115 Ave. 106 2d St., New York.	4	M.	July 8, 1860.	Fall 2 yrs. before.	Good. Good previous to accident.	Extensive femoral abscesses, no external opening.	Head of femur; acetabulum gouged; capsule ruptured; head almost absorbed.	Modified Hagedorn's splint, on well side. Weight and pulley on diseased side.	Wound nearly closed in six weeks. At two years after, walks well with a cane; hip perfectly sound.	1 1/2	1870.	
5. May Sweeney, Corning, New York.	5	F.	September 4, 1860.	Fall 18 months before.	Family history good. Good previous to accident.	Fistula, great deformity.	Head, neck, and part of trochanter major; acetabulum diseased, and gouged.	Wire-breeches.	Perfect result; walked with a cane in three months.	3/4	1863.	
6. Chas O'Hara.	10	F.	December, 1860.	Two years' standing from a fall.	Family history good. Always robust until time of fall.	Greatly emaciated and bony; sinusses with profuse discharge.	Head nearly absorbed. Femur one inch below trochanter minor; acetabulum perforated and gouged.	Wire-breeches.	Recovered in eighteen months.	8		Two years after, wound perfectly closed; is quite fleshy; walks without support, generally carries cane in the hand in walking; wears a cork sole three inches thick.
7. Davis, Lancaster, Ohio.	9	F.	March, 1861.	Fall two years before.	Good. Perfect previous to injury.	Great emaciation. Numerous sinusses. Excessive discharge. Limb strongly adducted, and apparently ankylosed.	Head, neck, and trochanter major; acetabulum perforated.	Wire-breeches.	Perfect recovery in eight months, with considerable motion.	3/4	1872.	In trying to luxate head from acetabulum, thigh was fractured near knee, separated near epiphysis.
8. Holmes, Clara A., Brooklyn, Iowa.	8 1/2	F.	April 24, 1861.	Fall in childhood, 18 months before.	Good. Previous health good.	Much emaciated. Several sinusses.	Head, neck, and trochanter major; acetabulum perforated.	Wire-breeches.	Perfect recovery, with motion.	3/4	1871.	
9. Schelling, Annetta, 24th St., near 8th Ave.	10	F.	May 8, 1861.	Fall 18 months before, on curbstone.	Good. Perfect previous to injury.	Worn with pain and sleeplessness; large abscesses connected with joint. (See Fig. 190.)	Femur below trochanters; acetabulum gouged. Neck absorbed, and head lying loose.	Wire-breeches.	Wound nearly healed in two months; walks without support. Good motion at joint.	3/4	1866.	Condition 6 months after operation, seen in Fig. 191.



## EXSECTIONS OF HEAD OF FEMUR, PERFORMED BY LEWIS A. SAYRE, M. D.—(Continued.)

Name and Address.	Age.	Sex.	Date of Operation.	Cause and Duration.	Family History and Previous Condition of Patient.	Condition at Time of Operation.	Extent of Disease and Condition of Parts involved.	Plan of After-Treatment.	Result.	Shortening in inches.	Lost from.	Remarks.
10. Eastory, Frank J., Beloit, Wisconsin.	10½	M.	March 2, 1862.	Six years' standing, from a fall.	Good. Perfect previous to injury.	Great emaciation and hectic; femur atrophied, with osteitis, with care through the new bone; hip rigid with abscesses.	Femur two inches below trochanter minor; all the new bone removed from about the femur.	Wire-breeches.	Died fifteenth day from tetanus.			Improved, until the ninth day, when he was taken with tetanus from exposure.
11. Evans, Barton, Wrightsville, Pa.	6	M.	April 10, 1862.	Kicked by a boy, three years before.	Good. Perfect previous to injury.	Extreme emaciation; profuse discharge from several sinuses.	Femur just above trochanter minor; acetabulum perforated and gouged; neck abscessed; head lying loose in acetabulum.	Wire-breeches. Short splint.	Wound closed in four months. At two years joint sound, walked well with a cane. Later, a perfect result.	1½	1860.	
12. Ann Murphy.	7	F.	May, 1862.	Fall two years before.	Good.	Greatly emaciated. Large abscess connecting with joint. No sinuses.	Femur between trochanters; neck and part of head absorbed; acetabulum gouged.	Wire-breeches. Short splint.	Wound nearly closed in two months. One year after recovery perfect, and walked without support.	¾		
13. Hilborn, Madison, Burlington, Iowa.	18	F.	July 3, 1862.	Fell on trochanter two years before.	Good. Perfect previous to injury.	Extreme emaciation; several sinuses discharging profusely. (See Pgs. 192.)	Head, neck, and trochanter major; acetabulum perforated and gouged; neck abscessed; head lying loose in the acetabulum; abscess between the internal pelvic foramen and bone.	Wire-breeches. Short splint.	Two years after, walks well with a cane; considerable motion; at four years good use of member; health perfect.	3	1866.	This case also reported at the epiphyse above the knee, in attempting to luxate the head from the acetabulum. (See Pgs. 195.)
14. Pendrak, J. J., New York.	8	M.	January 31, 1863.	Fell two years before from a fence.	Good. Health good.	Nearly dead from exhaustion and excessive suppuration.	Head, neck, and trochanter major; acetabulum perforated and gouged.	Wire-breeches.	Died in two weeks, from exhaustion.			

15. Cooke, O. S., New York.	14	M.	February 17, 1863.	Fell two years before.	Good. Health good.	Greatly exhausted, almost in articulo discharging profusely.	Head, neck, and trochanter major.	Wire-breeches.	Died fourteenth day, from double pneumonia.	1		Limb was nearly well, with limited motion; very slight discharge, from two sinuses, on back of thigh. Walked with crutches. Went into the country, and died of dysentery in Aug., 1864.
16. Durrle, O.	13	M.	March 9, 1863.	Fell out of a wagon, four years before.	Good. Health good.	Much exhausted from long suppuration, and various sinuses.	Head, neck, and trochanter major; acetabulum perforated.	Wire-breeches. Short splint.		¾	1865.	
17. Murphy, J. W., 347 E. 9th St., New York.	8	M.	July 3, 1863.	Fell two years before.	Good. Previous health good.	His condition was miserable.	Head, neck, and trochanter major; acetabulum perforated and gouged.	Wire-breeches.	Very good; walks without support; motions of joint almost natural. Good result, with motion.	¾	1873.	
18. Rowell, J. F., Fortbarn, Westchester Co., N. Y.	7	M.	March 22, 1864.	Fell from wall, 3 yrs. before.	Good. Health good.	Anemic and hectic.	Head, neck, and trochanter major.	Wire-breeches.	Died of marasmus and cholera infantum, August 3, 1865.	¾		Wound had healed six months before death.
19. Dakin, Ella, 106 York St., New York.	3½	F.	May 25, 1864.	Fell out of her crib, two years previously.	Father healthy. Mother delicate. Child always delicate.	Emaciated to a skeleton. Excessive suppuration, from several abscesses.	Femur above trochanter minor; acetabulum perforated.	Triple inclined plane.	Died in two weeks, from dysentery.			Operation was only palliative.
20. Keeler, J., 103 Mulberry St., New York.	4	M.	June, 1864.	Fell out of bed, 2 yrs. and 4 mos. before.	Family history good.	Extreme emaciation.	Femur above trochanter minor; acetabulum perforated.	Modified Hagedorn's splint.	Recovered with good motion.	¾	1869.	
21. Murphy, M., 9th Ave. and 30th St.	5	M.	July, 1864.	Fell nine months before.	Family history. Boy always strong.	Greatly reduced. Several sinuses.	Femur above trochanter minor.	Wire-breeches. Short splint.	Perfect recovery. (See Pgs. 180-182.)	¾	1871.	This is the most perfect recovery on record. Can skate, and dance as well as any one, and can kick higher than his head.
22. Egan, A. N.	9	M.	October 20, 1864.	Slight injury, four months before.	Father healthy. Mother delicate. Boy always delicate.	Reduced to a skeleton; great deformity. Excessive suppuration; numerous abscesses.	Half an inch below trochanter minor; acetabulum perforated.	Wire-breeches. Short splint.		¾		



## EXSECTIONS OF HEAD OF FEMUR, PERFORMED BY LEWIS A. SAYRE, M. D.—(Continued.)

Name and Address.	Age.	Sex.	Date of Operation.	Cause and Duration.	Family History and Condition of Patient.	Condition of Tissue of Osseous.	Extent of Bone removed, and Condition of Parts Involved.	Plan of After-Treatment.	Result.	Shortening, in inches.	Last healed from.	Remarks.
23. Watson, W. K. Sandusky, Ohio.	10	M.	October 25, 1864.	Cause not known. Had been lame 18 months.	Family healthy. Very good.	Great emaciation and deformity. Several sinuses leading to dead bone.	Head, neck, and trochanter major. Second operation, May 24, 1865, removed six inches exposed femur.	Triplic althod, plane.	Died July 16, 1865, from dysentery.			Second operation required from large cotton in the wound after first operation, which produced abscesses and the necrosis. Is now a very strong and large young man. Walks without any support, and with scarcely a perceptible limp.
24. Brown, George, Wilton, Conn.	8	M.	January 25, 1866.	Injured his hip, going up stairs, two years previously.	Family history good. Boy very stout and strong.	Reduced to a skeleton. Numerous sinuses on outer part of thigh.	Head, neck, and trochanter major; acetabulum perforated and gouged.	Wire-breeches. Short splint.	Good result, with motion.	3/4	1874.	
25. Dugan, C., 118 Greenwich Ave., New York.	7	F.	June 18, 1866.	Fell off a wagon-step, two years and four months before.	Good. Good previous to accident.	Numerous sinuses. Great emaciation. Strong adhesion of limb.	Head, neck, and acetabulum perforated.	Wire-breeches. Tonsils—short splint.	Recovered, with good motion.	3/4	1872.	
26. Delany, Elizabeth, 614 East 14th St., New York.	11	F.	July 27, 1866.	Had been lame for two years. No cause ascertained.	Very good. Father is a remarkably strong man.	Very great emaciation. Large abscess; four sinuses.	Head, neck, and trochanter major; acetabulum perforated.	Wire-breeches. Short splint.	Can walk on limb, but has no motion at hip-joint. Sinuses completely open four years.	1	1875.	
27. Devlin, Lizzie, 447 4th Ave., New York.	6	F.	October 9, 1867.	Fell from a swing, 13 months before.	Perfect and very active. Parents healthy.	Greatly emaciated; several sinuses. Left limb very extensively tuberculous, but not softened.	Just above trochanter minor. Three loose pieces of bone removed from acetabulum.	Wire-breeches. Iron, gutta serena, milk-punch, short splint.	Died of phthisis in 1872. Wound had been healed more than a year.	3/4		Wound nearly healed in eight weeks. Left hip-joint much improved in flesh, and in six months walked quite well with a high heel on boot.

Name and Address.	Age.	Sex.	Date of Operation.	Cause and Duration.	Family History and Condition of Patient.	Condition of Tissue of Osseous.	Extent of Bone removed, and Condition of Parts Involved.	Plan of After-Treatment.	Result.	Shortening, in inches.	Last healed from.	Remarks.
28. Pheil, M. D., Southwick, Mass.	14	M.	December 22, 1867.	Blow on trochanter major, four months before.	Parents healthy. Boy strong until accident.	Encased to a skeleton; greatly distorted. Trochanter on the dorsum of the femur. Six sinuses.	Femur three inches below trochanter minor.	Wire-breeches.	Good joint. No extension was used after the operation.	4	1874.	Walks well with high-heel boot; good joint-motion. (See Nos. 157, 158.)
29. Jacqueth, Sarah, Rochester, New York.	13	F.	May 24, 1868.	From a jump and fall, six years before.	Good. Good previous to accident.	Greatly emaciated. Excessive discharge from several sinuses.	Femur above trochanter minor.	Wire-breeches.	Died July, 1868, from aneurysm.			Went home to Rochester, wound nearly healed. Was exposed to sun, and died quite suddenly and unexpectedly.
30. Rosenberg, H., 244 East 88th St.	5	M.	December 6, 1868.	Fell on heels in the yard, six years before.	Mother healthy. Father delicate. Child always delicate.	Great emaciation. Excessive suppuration from several sinuses.	Remains of femur above trochanter minor; acetabulum perforated. Head and neck absorbed.	Wire-breeches.	Died December 24, 1868, of exhaustion.			
31. Sutherland, George, St. Catharines, Canada.	6	M.	February 24, 1869.	Fell from a swing, six months before.	Good. Previous health good.	Leg flexed at an acute angle, and strongly adducted. Mode of locomotion on all-fours.	Upper and posterior border of acetabulum removed, and latter perforated. Head and neck of femur had already been absorbed.	Wire-breeches.	Anchylitis; acquired such motion at the sacro-lumbar articulation as to compensate for the loss of shortening of the joint.	Could not measure the shortening, as the other leg was diseased.		Had had hip-disease of the opposite side; recovered with angular contraction. This side not operated upon. Shortening of the two limbs about equal.
32. Williams, Lyman.	28	M.	January 19, 1870.	Lame for six years. No cause ascertained.	Good. Previous health good.	Reduced to a skeleton from excessive suppuration.	Femur below trochanter minor. Acetabulum perforated and gouged.		Died December 18, 1871, from fatty degeneration of the liver and kidneys.			Wound nearly healed, three inches of new bone formed.
33. Woods, W., Child's Hospital, Randall's Island.	33	M.	February 7, 1871.		No previous history of this case could be obtained.	Leg flexed and adducted. Greatly reduced by excessive suppuration.	Head, neck, and trochanter major removed.	Wire-breeches. Short splint.	Good motion.	3/4	1873.	



**EXSECTIONS OF HEAD OF FEMUR, PERFORMED BY LEWIS A. SAYRE, M. D.—(Continued.)**

Name and Address.	Age.	Sex.	Date of Operation.	Cause and Duration.	Family History and Previous Condition of Patient.	Condition at Time of Operation.	Extent of Bone removed, and Condition of Parts involved.	Plan of Abre- Treatment.	Result.	Short- avg. inches.	Last heard from.	Remarks.
34. Storch, Bernard, Hudson City, New Jersey.	9½	M.	February 24, 1871.	Fall four years before.	Very good. Parents remarkably healthy.	Emaciation, adduc- tion, numerous sinuses.	Head, neck, and trochanter major.	Wire- brooches. Short splint.	Recovered with almost perfect motion.	¾	1870.	(See Nos. 189-185.)
35. Zittle, F., 223 East 62d St., New York.	4½	M.	April 23, 1871.	From fall two years before.	Parents healthy, but very delicate.	Enormous abscess unopened.	Head loose, neck diseased. Acetab- ulum perforated and gouged. Trochanter major removed.	Wire- brooches. Short splint.	Perfect with good motion.	¾	1870.	
36. O'Farrell, Matthew, 226 East 34th St., New York.	9	M.	December 22, 1872.	Struck by a stone in groin, four years before. Again hurt by a fall from a wagon, November, 1871.	Mother died of consumption. Father healthy. Boy delicate.	Greatly emaciated. Profuse discharge; sinuses great deformity.	Head, neck, and trochanter major removed. Acetab- ulum perforated. Large quantity of bone removed from ilium.	Wire- brooches. Short splint.	Walks with crutches, wound healed, but has slight discharge from another sinus leading to posterior crest of ilium, but cannot touch dead bone.	1½	1874.	Died in summer, 1874, from exhauc- tion. Hip-joint well, but had ne- crosis of greater part of ilium. Should have been operated upon six months sooner.
37. Ward, Martha, Manhattan- vils, New York.	5	M.	January 22, 1873.	From fall two years before.	Father died of phthisis. Mother very healthy. Child rather delicate.	Great emaciation. Excessive dis- charge from four sinuses.	Head and neck of femur entirely de- stroyed. Chronic abscess in the tro- chanter major; acetab- ulum perforated and gouged.	Wire- brooches. Short splint.	Perfectly well with good motion. Can walk well with a very slight limp. Can run without the limp.	¾	1870.	

38. Maiden, Dr. William P., Alpena, Michigan.	32	M.	January 26, 1873.	From fall at three years of age, re- sulting in ankylo- sis, with slight necks shortening when nine- teen. Disease developed in 1872 from an accident.	Parents both healthy. Has always been strong and active.	Great emaciation; profuse discharge; pain, which requires the use of large doses of morphia.	Head, neck, and trochanter major; acetabulum per- forated and gouged.	Modified Hagedorn splint, with rotating and abducting screws.	Has a useful and movable joint. Is engaged in active practice in Michigan.	8	1874.	This is the oldest case of any exsec- tion of hip for disease.
39. Lawson, George.	36	M.	January 29, 1873.	From an injury six months previous.	Parents healthy. Health good.	Greatly exhausted; great pain.	Head, neck, and trochanter major; acetabulum per- forated; lower por- tion of femur increased.	Wire- brooches.	Died in three weeks, of amyloid degeneration of kidneys.			Wound about hip nearly healed. Abscesses formed in thigh below, after operation.
40. McCarthy.	9	M.	February 12, 1873.	From a fall six years before.	Good. Always strong and active.	Great deformity. Several sinuses.	Femur just above trochanter minor; head and neck of neck ab- scessed. Acetab- ulum perforated, and an abscess in- side the ilium.	Wire- brooches. Short splint.	Tolerable motion, and can bear his weight on the limb.	1	1874.	
41. Morrie, Malinda, 736 1st Ave., New York.	13	F.	February 12, 1873.	From a fall ten and a half years before.	Good. Girl robust and strong.	Limb adducted, flexed, and fixed; sinuses near groin discharging.	Remains of head and neck of femur, nearly absorbed; acetabulum filled with new bone. A new joint formed, on which the end of femur rested.	Wire- brooches. Short splint.	Can walk without crutch or cane. Good motion of joint.	1½	1874.	



EXSECTIONS OF HEAD OF FEMUR, PERFORMED BY LEWIS A. SAYRE, M. D.—(Continued.)

Name and Address.	Age.	Sex.	Date of Operation.	Case and Duration.	Family History and Previous Condition of Patient.	Condition at Time of Operation.	Extent of Tumor removed, and Condition of Parts Involved.	Plan of After-Treatment.	Result.	Shortening, in inches.	Last heard from.	Remarks.
42. Gregory, R. S., Houston, Texas.	4	M.	February 17, 1874.	From a fall from a steamer when 38 months previous to date.	Parents perfectly healthy. Child healthy previous to accident.	Abscesses about knee; one over symphysis pubis. Great ossification.	Dissected end of femur and portion of acetabulum. Head and neck entirely destroyed, and shaft perforated the acetabulum.	Wire-entress. Long splint.	Good motion. Can walk, and bear weight upon leg.	½	Mar., 1874.	Died May 6, 1875, from sudden suppurative nephritis. Passed a large quantity of pus by the urethra for two or three days previous; wound closed, except some ever pubis, from which a few drops of pus discharged daily. No autopsy made.
43. Hudgins, Blad., Virginia.	4	F.	May 28, 1873.	From a blow from a steamer iron mallet before.	Parents healthy. Child well before accident.	Extensive abscess on outer part of thigh. Greatly emaciated.	Femur just above trochanter minor. Portions of depressed bone from the acetabulum, which was perforated.	Wire-entress. Long splint.	Limited motion. Walks with extension splint, without crutch or cane.	½	March 15, 1874.	Died June 17, 1874, from dysentery. Wound entirely closed for four months.
44. Sollen, John, 16	16	M.	June 13, 1873.	Eight years' standing. No cause known.	Good. Health good until eight years ago.	Waxy kidneys and fatty liver. General anasarca.	Femur just above trochanter minor; acetabulum gouged.	Wire-breeches.	Movable joint; able to bear entire weight on limb. Anasarca removed, health vastly improved; cheeks ruddy.			This case was operated on with no prospect of success, as he had waxy kidney and liver, which no doubt still exist, but he was made comfortable and his hip well for 15 months. Died January 13, 1875, from inflammation from cold.

45. Burks, Bridget.	12	F.	October 1, 1873.	From fall three years before.	Father died of phthisis. Mother healthy. Always well until 8 years ago.	Pale and very anemic. Leg scorched, aducted, and flexed on pelvis. Several sinuses.	Femur just above trochanter minor; acetabulum gouged.	Trochae. Wire-breeches. Long splint.				
46. Anderson, Martin.	8	M.	December 10, 1873.	No injury known. Has been lame 21 months.	Parents healthy. Boy very stout and strong.	Leg flexed and aducted. Several sinuses leading to dead bone on outer part of thigh.	Femur just above trochanter minor.	Wire-breeches. Short splint.	Movable joint. Can bear entire weight on limb.	½		
47. Kirkbride, Sarah, 108 Charlton St.	10	F.	January 21, 1874.	Fall from stoop, five years before.	Family healthy. Child always healthy until the accident.	Terribly emaciated. Discharges of pus from several sinuses. Gravidly distorted.	Femur three inches below trochanter minor. Head and neck absorbed. Acetabulum perforated and gouged.	Wire-breeches.	Died from exhaustion, April 7, 1874.			
48. Brown, Louisa T., 483 Bedford Ave., Brooklyn.	4½	F.	February 11, 1874.	Fall down stairs, when 23 months old.	Father died of phthisis last year. Mother healthy.	Reduced to a skeleton. Terribly distorted. Numerous sinuses.	Femur just above trochanter minor.	Wire-breeches. Long splint.	Has good motion, and can bear entire weight on limb. Wound entirely closed.	½		
49. Charles, Menck, 40 Chrysalis St.			May 13, 1874.			Much reduced. Large abscess on outer part of thigh slough over ankle, and on inner part of knee.	Head and neck absorbed. One and a quarter in. of femur removed. Several pieces of bone removed from acetabulum, & large abscesses opened.	Wire-entress. Tonsils, etc.	Died June 17, 1874, from exhaustion.			
50. Caroline Winger, Middle Village, Long Island.	8	F.	June 10, 1874.	Exposure to cold two years ago.	Parents healthy.	General condition excellent. Large abscess on anterior and upper part of thigh.	One inch of shaft of femur removed. Head and neck absorbed. Acetabulum perforated and gouged.	Wire-entress. Short splint.	Recovered with good motion.			
51. Oliver Adams, Gilbertsville, Osego Co., New York.	7	M.	October 16, 1874.	Fell two years ago, and exposure to cold one year after.	Parents healthy. Always very active.	General health very bad, emaciated to a skeleton. Thigh aducted, flexed, and fixed. Sinuses on anterior part of thigh.	Head, neck, and trochanter major removed. Acetabulum perforated and gouged.	Wire-entress. Tonsils. Short splint.	Recovered with good motion.			



## EXSECTIONS OF HEAD OF FEMUR, PERFORMED BY LEWIS A. SAYRE, M. D.—(Continued.)

Name and Address.	Age.	Sex.	Date of Operation.	Cause and Duration.	Family History and Previous Condition of Patient.	Condition at Time of Operation.	Extent of Bone removed, and Condition of Parts involved.	Plan of After-Treatment.	Result.	Shortening, if any.	Last heard from.	Remarks.
52. Robert Lambertson, 645 West 43d St., New York.	21	M.	November 1, 1874.	Four months since had pneumonia, when recovering fell from side of chair.	Parents healthy. Child strong until four months ago.	Wretched condition. Nearly starved.	Head lying loose in the acetabulum which was rough. Femur removed. Acetabulum scraped.	Modified Haselden's splint.	Perfect motion, with no shortening.	None.	Dec., 1875.	This is the youngest case.
53. Peter Osling, 16 Jefferson St., New York.	6	M.	February 6, 1875.	Slipped three years and five months before, and hurt hip.	Very good. Always very strong and active.	Great deformity. Very much emaciated. Several sinusses discharging profusely.	Femur divided just above trochanter minor. Acetabulum perforated. Several pieces of necrosed bone picked out. Sinusses hid open.	Wire-entrass. Long splint.	Wounds entirely closed. Motions almost perfect.	✓	Dec., 1875.	Strong robust boy.
54. Charles Brannan, 92 S. Oxford St., Brooklyn.	4½	M.	March 28, 1875.	No cause known; has been lame for two years.	Healthy family and healthy child.	Reduced to a skeleton by excessive suppuration. Several sinusses.	Head lying loose in acetabulum, and neck absorbed. Femur removed. Saw of one and a quarter inch below trochanter minor. Acetabulum perforated and gouged.	Wire-entrass. Long splint.	Almost perfect motion, less than an inch shortening.	✓	Feb., 1876.	
55. Bridget D. Smith, 431 Forsyth St.	6	F.	March 31, 1875.	Kicked three years before.	Very good. Always strong and active.	Very much reduced. Several sinusses on upper part of thigh leading to dead bone.	Head partly absorbed. Femur sawed just below trochanter minor. Several small pieces of bone removed from acetabulum, which was not perforated.	Wire-entrass. Modified Haselden's splint. Long hip-splint.	Motion nearly perfect.	✓	Feb., 1876.	

56. John F. Drumm.	5	M.	April 21, 1875.	Fall 18 months before, striking on knee.	Parents healthy. Stout, active boy, until accident.	Very much emaciated. Healed. Large abscess over trochanter major.	Head partly absorbed, and lying loose in acetabulum. Femur sawed above trochanter minor. Several pieces of necrosed bone picked out.	Wire-entrass. Long splint.	Walked on long splint without crutch or cane.		Feb., 1876.	September 23, was taken to the photographer's to have picture taken from which Fig. 107 is engraved.
57. Ellen Sullivan, 70 Baxter St.	6	F.	September 22, 1875.	Not known.	No family history of any kind could be obtained, as the child's mother is in the insane asylum, and father dead.	Reduced extremely. Several sinusses over hip. Extreme distension. (See Fig. 105.)	Head nearly absorbed, a small piece of it lying loose in acetabulum. Femur sawed above trochanter minor. Acetabulum perforated and gouged. Sinusses on thigh scraped out.	Wire-braces, Tonics, etc. Long splint. Short splint.	Wound entirely closed, without shortening. Good motion.		Feb., 1876.	Child can walk in wheel-crutch.
58. Rosa Mullins, 240 West 47th St.	8	F.	September 20, 1875.	Cause not known, followed severe illness one year ago.	Was always healthy until one year ago, when she had dysentery.	Wanted to a skeleton. Abdomen very much distended. A large opening on posterior part of hip.	Head, neck, and part of trochanter major absorbed. Three small pieces of bone removed from acetabulum, which was perforated, and end of shaft saved smooth.	Wire-braces, Tonics, etc. Long splint.				
59. Mary Mulhoney, W. Houston St.	7	F.	December 15, 1875.	Injury two and a half years ago by jumping from a stoop.	Was always very healthy and active. Family history very good.	Much emaciated. Greatly distorted. Several sinusses.	Head, neck, and trochanter major. Acetabulum perforated. A number of small pieces of bone were picked out of the acetabulum.	Wire-braces, Tonics, etc. Long splint.				



## SYNOPSIS OF FIFTY-NINE CASES OF EXSECTION OF THE HIP-JOINT FOR MORBUS COXARIUS.

Thirty-nine of these cases are now alive. Of these, twenty recovered with motion, and less than one inch shortening; eight recovered with motion, and more than one inch shortening; two recovered with ankylosis, and nine are still under treatment, with every prospect of good results.

Twenty of these cases are now dead. The cause of death in each case, as well as the length of time after the operation, is as follows:

- Case 2 died from exhaustion on the eighth day.<sup>1</sup>
- Case 3 died from exhaustion in two months.
- Case 10 died from tetanus on fifteenth day.
- Case 14 died from exhaustion in two weeks.
- Case 15 died from double pneumonia on fourteenth day.
- Case 16 died from dysentery seventeen months after the operation, wounds having been almost closed for some months.
- Case 19 died from marasmus two years and two months after the operation. Wound had been closed for six months.
- Case 20 died from dysentery in two weeks.
- Case 23 died from dysentery eight months after the operation.
- Case 27 died from phthisis two years after the operation. Wound healed for more than a year.
- Case 29 died from sunstroke from exposure on fortieth day.
- Case 30 died from exhaustion in three weeks.
- Case 32 died from fatty degeneration of the liver and kidneys twenty-three months after the operation. Wound nearly healed; three inches of new bone formed.
- Case 36 died from exhaustion in eighteen months, from progressive disease of the ilium.
- Case 39 died from amyloid degeneration of kidneys in three weeks.
- Case 42 died from sudden suppurative nephritis, two years and three months after the operation. For nearly a year had been able to walk without support.
- Case 43 died from dysentery thirteen months after the operation. Wound had been entirely closed for four months.
- Case 44 died from nephritis from cold, nineteen months after the operation. Had been well for nearly a year.
- Case 47 died from exhaustion two and a half months after the operation.
- Case 49 died from exhaustion in one month.

Of these twenty cases that died, eight had recovered from the operation some time previous to death, which was caused in each

<sup>1</sup> The figures refer to the number of the case in the table.

case by some other disease entirely foreign to the operation (cases 16, 19, 27, 32, 36, 42, 43, 44).

Of the twelve remaining, four died from acute intercurrent diseases, such as tetanus, double pneumonia, dysentery, and sunstroke (cases 10, 15, 23, 29). This leaves but eight who have died from the exhausting effects of hip-disease, without some intercurrent complication (cases 2, 3, 14, 20, 30, 39, 47, 49).

## LECTURE XXIV.

## DISEASE OF THE JOINTS.—THE DISEASES WHICH SIMULATE HIP-DISEASE.

Sacro-Iliac Disease.—Disease of the Knee.—Caries of the Ilium.—Caries of the Ischium.—Periostitis of Adjacent Parts.—Psoas Abscess with Pott's Disease.—Inguinal Abscess.—Inflammation of the Psoas Magnus and Iliacus Internus Muscles.—Congenital Malformation of the Pelvis, commonly known as "Congenital Dislocation."—Paralysis of the Lower Extremities.—Injuries of the Hip, including Diastasis, Fractures, and Dislocations.

GENTLEMEN: At my last lecture we completed the study of hip-disease, and I invite your attention this morning to some of the diseases which simulate it.

Hip-joint disease is liable to be confounded with sacro-iliac disease; disease of the knee; caries of the ilium or ischium; periostitis of the parts adjacent to the hip-joint, particularly of the great trochanter. It is more rarely confounded with psoas abscess associated with Pott's disease; inguinal abscess; inflammation of the psoas magnus and iliacus internus muscles; congenital malformation of the pelvis, commonly known as "congenital dislocation;" paralysis of the lower extremities, and injuries to the hip.

SACRO-ILIAC DISEASE.—The anatomy of the sacro-iliac junction is thus given by Gray:

"The sacro-iliac articulation is an amphiarthrodial joint, formed between the lateral surfaces of the sacrum and ilium. The anterior or auricular portion of each articular surface is