

At eight months one successful and one unsuccessful case are reported, the former being the case of Dr. Burrell alluded to above.

At ten months we find one case, in which Dr. Geo. H. Monks resected the head of the humerus for pain, paralysis and atrophy of the muscles about the shoulder and of all the muscles supplied by the median and ulnar nerves. The man had absolutely no use of his arm. The operation resulted in great improvement of his condition.

At one year there is one case, in which attempts at reduction by manipulation were desisted from on account of fear of fracture.

At one and a half years we have one case, in which Dr. Burrell resected the capsule for a recurrent dislocation on a man of twenty-seven with good result.

A tabular view of the cases, arranged according to time, follows:

Time.	Cases.	Successful.	Failures.	Remarks.
2 to 3 weeks.	4	4	0	
3 "	2	2	0	
4 "	2	2	0	
5 "	4	4	0	
6 "	2	1	1	
9 "	1	0	1	
3 months.	2	0	2	
4 "	1	0	1	
5½ "	1	0	1	Fracture of surgical neck.
6 "	2	0	2	One fracture of surgical neck.
8 "	1	1	0	
10 "	1	0	1	Resection of head of humerus.
1½ years.	1	0	1	Open incision and resection of capsule.
	24	14	10	

A glance at this table shows that all the cases reduced by manipulation were of six weeks' duration, with one exception—that reduced by Dr. Burrell at eight months.

There were 14 successful cases, 13 of them under six weeks. There was one failure at six weeks.

All the cases over six weeks in duration could not be reduced by manipulation, except in the case above noted. There were thus 10 cases in which manipulation failed, and of these 10 only one was of less than seven weeks' duration. In one of these resection of the head of the humerus was attended by a happy result, and in one, a recurrent case, excision of the capsule was successful.

In two of the unsuccessful cases, one at five and a half and one at six months, fracture of the surgical neck resulted from attempts at reduction by manipulation.

If these cases show anything, it is that after more than six weeks have elapsed, such changes have usually taken place as to render success with such manipulative methods as it is safe to employ without danger of fracture of the humerus or rupture of the axillary artery, improbable.

If reduction is to be effected at all, it must be ac-

complished by arthrotomy, with or without resection of the head of the humerus. Whether such operative interference should be adopted, must be decided upon the merits of each individual case. We must be guided by—

- (1) The extent of the present disability.
- (2) The amount of pain.
- (3) The pressure symptoms.

Where very great disability involving inability to earn a livelihood, pain, or paralysis from pressure are present, in dislocations of over six weeks' standing and in patients who are in good condition to bear operation, operative relief should be considered, although both operations are of such severity that the question of their performance should be carefully weighed in each case.

The results of arthrotomy and resection in the last six years give us somewhat greater hope of affording relief to our patients by their employment than those reported in Kocher's and Brun's papers.

The mortality of operative procedures will probably be low if cases in which senile or other constitutional defects render operation dangerous are rigidly excluded, and if in cases where arthrotomy is attempted, and the conditions found point to a difficult and tedious operation, prompt resection is performed.

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#### STERILITY IN THE MALE.<sup>1</sup>

BY JOHN G. BLAKE, M.D.

THE rare mention in current medical literature of this subject is the chief reason for this paper. A short summary of the views of writers may not be out of place, and the report of two cases of a rare form of the affection may have some interest for gynecologists.

Sterility in the male is that condition in which, if there be any seminal fluid at all, it lacks all fecundating power. The absence of this power may be dependent upon one or two conditions, namely: the semen may be ejaculated in normal amount, but the spermatozoa are either entirely absent or dead when discharged. This constitutes the condition of azoöspemia. Or there may be a total absence of all seminal fluid, constituting what is known as aspermia. In both cases the act of copulation may be complete. As a corollary to the above two conditions, we might mention malemission, the condition in which the semen is discharged into the male urethra, but is not ejaculated into the vagina.

<sup>1</sup> This paper will appear in the Boston City Hospital Medical and Surgical Reports, Eighth Series.

First of all we will discuss the condition known as azoospermia, or the ejaculation of semen in which the spermatozoa are either dead or absent when discharged. This condition may be due (1) to failure of the testicles to produce spermatozoa, or (2) to mechanical obstruction in some part of the passage by which the spermatozoa reach the urethra. The testicles fail to secrete spermatozoa when there is a bilateral retention or a bilateral atrophy, or malignant, syphilitic, or tubercular degeneration of both glands. It is also obvious that no spermatozoa will be secreted when both testicles are absent either congenitally or from castration. Occlusion of any part of the excretory ducts may be either congenital or acquired. The latter is the more common; and of the acquired forms, bilateral gonorrheal epididymitis is by far the most common. Among the rarer causes we may mention wounds, syphilitic and tubercular degenerations, and pressure of tumors, whether benign or malignant.

*Aspermia* is that condition in which either no semen is produced, or it is entirely retained in the seminal vesicles, and no ejaculation takes place. The latter condition occurs only when there is an occlusion of the common ejaculatory ducts, and would not be produced by obstruction of the vasa deferentia. Occlusion of the common ejaculatory ducts is usually caused by posterior urethritis, but it may be congenital, or be caused by traumatism (chiefly that inflicted by surgeons in operating for stone). Concretions are a very rare cause of obstruction of the ducts. The forms of obstruction mentioned above produce, it is true, an apparent condition of aspermia; but, strictly speaking, it is not true aspermia, for semen is produced, although it is retained in the vesicles or in the ducts.

True aspermia is a much rarer condition, and may be due to anesthesia of the *glands penis*, whereby there is no reflex excitation of the ejaculatory centre in the cord. Occasionally anorchides, while incapable of procreation, nevertheless have sexual desire, and occasional involuntary emissions, and are quite able to copulate.

Malemission is where — although testicles and accessory sexual glands secrete normal seminal fluid, capable of fecundating — the fluid is not properly ejaculated into the vagina, but is retained in the male urethra, and exudes drop by drop after coitus has been completed; or the power of ejaculation may be perfect, but owing to some fault in the urethra, such as hypospadias, epispadias, or fistula, the semen escapes from the urethra before it reaches the vagina. The patient suffering from this condition cannot be said to be sterile, neither is he impotent, yet the result is the same; he is incapable of procreation. In view of the fact that about one woman in eight is barren, and that the proportion of sterile men is about the same, it becomes a matter of considerable importance for the physician to decide in which, the husband or wife, the trouble lies. It is usually the young wife who comes to the physician on account of barrenness. The husband is not apt to be as sensitive on this point, since it means a great deal more to the woman. The semen, if there is any, should be thoroughly examined for living spermatozoa. This should be done under the microscope soon after it has been passed. If the spermatozoa are found to be alive, of course the man is potent and we must examine the woman more thoroughly. This applies to cases where the semen is ejaculated normally. Of course the semen,

while it is perfectly normal, may nevertheless, never reach the vagina. Sterility in the male has been confounded with impotence, no distinction having been drawn between the inability to procreate and incapacity for sexual intercourse.

Among gynecologists no inconsiderable number of the cases they are called upon to treat are for the cure of sterility in the female. And many times only failure attends the efforts, when from all appearances and results of local successful treatment the opposite should follow. In a general way, of course, we are aware that from many causes, congenital and acquired, the failure may be in the male, but the actual demonstration by microscopic examination is not often resorted to. Recently it has come under my observation to have this done, and in two cases the results showed that the fault did not belong to the female. And the curious feature of the cases was that in neither of the two was there the least suspicion that the man was in fault. Both were fine specimens of manhood, with keen sexual appetites, married to perfectly healthy young women.

Number one was a man in the prime of life, six feet high, weighing about 180 pounds, living in the open air most of the time, of temperate habits and correct life, with no hereditary tendencies; brothers and sisters married and fruitful; had been married to a woman a few years his junior, but perfectly healthy and of healthy family, for nine years, yet the woman was never pregnant. She consulted me for sterility. I took her into St. Elizabeth's Hospital, and under ether could detect nothing abnormal in the condition of the pelvic organs. Uterus did appear to be a little spongy, with a possible endometritis. It was dilated, curetted and packed, more with a view of ensuring a pervious canal and healthy endometrium than for any marked evidence of existing disease. When in the course of a couple of weeks she left the hospital I felt very confident that there was no obstruction to conception on her part. She had always been perfectly regular in regard to the menses. I was looking for success as the result of the operation, but it did not come. Month after month passed without interruption of the menses. I finally became convinced that the fault was not on the woman's side. A microscopic examination of the semen made by Dr. W. T. Councilman twice within a month showed an entire absence of spermatozoa in both specimens, much to the husband's surprise. He assured me that he never had had any private disease, gonorrheal or syphilitic, never received any injury, and was not aware of any defect in his organization; always enjoyed married life, vigorous sexually, no malformation or atrophy of organs. His disappointment was keen.

Number two was that of an Italian in the prime of life, married for the second time to a young and perfectly healthy woman ten years his junior. They were devoted to each other, and were very much disappointed that no children came. An examination of the wife showed a small os, but normal uterus. Menstrual function regular and not painful. No ovarian disease. The cervix was dilated and packed with gauze for a week, and afterwards an Outerbridge wire dilater inserted. No result. Some months afterwards cervix again dilated to insure an open and straight canal, but without success. After this it was deemed wise to investigate the husband's case. Before doing so, the second wife of the husband's brother remarked

that it was useless to be treating the wife, as the fault was not with her, but with the husband, and that it was a family peculiarity. She was a second wife, and had never been pregnant. Her husband's first wife, although a healthy young woman, had never been pregnant. My patient's husband's first wife had been a young and healthy Italian woman. She had never been pregnant; and so it ran through the family. Husband claimed to have been free at all times from disease of a specific character, showed no results of previous disease, and was free from malformation of any kind. Microscopic examination of semen showed an entire absence of spermatozoa, as in Case No. 1.

In discussing this subject with gynecologists, I find that some of them insist on investigating the husband's condition, and satisfying themselves that he is all right before submitting the wife to treatment, unless there is manifest disease which would prevent conception. I think this a wise precaution in many cases.

### THE PERMANENT OR LATER RESULTS OF FRACTURES OF THE SKULL.<sup>1</sup>

BY WILLIAM N. BULLARD, M.D.

THIS paper, which is intended only as a preliminary one, is the result of investigations in regard to the present condition of patients who were formerly in the Boston City Hospital with fracture of the skull. The diagnosis is taken from the hospital records and in most cases was evident.

I will not enlarge on the difficulty of this investigation except to say that it has occupied much of my time personally during portions of the past three years. I have attempted to find each patient, and have not accepted any records except from the patient himself or some person whom I believed fully competent to state his physical condition. Of course, very many persons were sought for who could not be found, and it was unusual when any one was found at the address given when at the hospital.

In undertaking this work I had hoped to be able to throw some light on the question as to whether the future condition of the patient with fractured skull were better with or without operation, and under what circumstances operation was advisable. Unfortunately the statistics obtained are too few to obtain any definite answers to these questions, but they may be of value to us as making a beginning in this direction, as well as in other ways. It seems to me that hitherto our views have been influenced by general considerations and by special conditions rather than by definite knowledge derived from a large number of carefully followed cases.

The number of patients in regard to whom information has been obtained is 70: male adults 44, children 15, female adults 2, children 5; age unknown 4 (3 males and 1 female).

The location of the fractures is as follows:

Base . . . . .	19
Vertex . . . . .	48
Frontal region . . . . .	15, right 11, left 4.
Parietal region . . . . .	19, " 9, " 10.
Temporal region . . . . .	5, " 3, " 2.
Occipital region . . . . .	9, " 6, " 3.
Unknown . . . . .	5

<sup>1</sup> Read before the Surgical Section of the Suffolk District Medical Society, March 3, 1897.

*Operations*, that is, trephining or some serious surgical interference, occurred in 15. In 54 there was no operation. In one it is unknown whether there was an operation or not.

The longest time which has elapsed in any case between the time of injury and the time of examination is forty-seven years in one case. The next longest is fifteen. In nine patients the time elapsed was between ten and fifteen years; it was between five and ten years in 24 patients; it was four years in five patients; three years in nine cases; two years in nine cases; one year to eighteen months in eight cases; nine months in two cases; and in two cases the time elapsed was unknown, but it was at least several years.

In estimating the results of fractures of the skull, I have not taken into account the paralyses produced at the time of injury, for these are apt to be obvious, and their duration and severity can usually be determined with some degree of probability before the patient leaves the hospital. (There were noted, however, three cases of hemiplegia.) My object has been rather to draw attention to those symptoms which, while less obvious at first, later interfere with the patient's comfort, or ability to work and earn his living. I wish to consider these both in relation to the patient's condition and also in relation to the method of treatment at the time of injury.

Out of our 70 patients, 37 presented *no* symptoms due to the injury, when examined. Of these one was examined nine months after the injury, three one year after, four at two years after, five at three years after, five between three and five years, ten between five and ten years, and the rest more than ten years after, except for two cases in which the time was unknown, but in each it was several years.

Eight patients presented symptoms which were slight or insignificant.

Eighteen patients presented symptoms which were troublesome, but which would not prevent them from earning their living.

Seven patients presented serious symptoms.

In all the cases with serious symptoms there was mental trouble. I will mention these cases in detail.

**CASE I.** Male, forty-eight. Had fracture of the base of the skull. No operation. He seems to have been a hard drinker before the accident, but after the injury small amounts of alcohol affected him to an extreme degree, so that he would become so violent that his family were afraid of their lives and were obliged to leave him two or three times. When not under the influence of alcohol he was peculiar; "crazy since the injury." He died six and one-half years after the injury of tuberculosis pulmonum.

**CASE II.** Male, twenty-six years old when injured. Is now at the State Hospital for Dipsomaniacs at Foxboro; seven years after injury. He had been a hard drinker for some years previous to injury, and has continued to be so since. His mental symptoms are melancholy and hallucinations of sight and hearing. It is extremely doubtful whether they are connected with the injury, which was in the left frontal region. There was no operation.

**CASE III.** Male, ten years old at time of injury. Fracture in right frontal region. No operation. It is now fifteen years since the injury. He is said by his mother to be peculiar. Is "hasty," and probably at times rather violent. Is not addicted to alcohol,