

ABSCESS OF THE PROSTATE *

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THE subject of abscess of the prostate may seem to many but a trite one, and undoubtedly the majority look upon it as principally a condition limited to the category of a complication of acute specific urethritis. That such is not the case but a cursory review of the literature is necessary. The interesting case of Lydston where the condition so closely simulated prostatic hypertrophy that even at suprapubic cystotomy it was unsuspected, and spontaneous rupture took place during a period of bladder drainage; or Harlow Brooks's case with its course so typical of enteric fever that for four weeks the true condition was completely masked, and more recently Bugbee's report of five cases seen as a complication of influenza during the recent epidemic, all show the deviation from the usual that prostatic abscess can manifest and broaden the field of possibilities calling for differential diagnosis.

Similarly in the short series of sixteen cases that it has been my opportunity to study, there have occurred certain features of unusual interest in diagnosis, making them worthy of a report at this time.

Prostatic abscess calls, in the first place, for an acute infection of the acini of the gland by a virulent organism of the pus-forming type, and we recognize in the beginning that this infectious process may manifest itself in four different degrees of severity, leading on the one hand to a limitation of the infection at any one of the stages, or, on the other hand, to a continuation of the process to a breaking down of tissue and the formation of an abscess cavity. These four forms of involvement from the time of the entrance of an infectious agent are: (1) The catarrhal, (2) the follicular, (3) the parenchymatous, (4) the periprostatic; and it is only when the infecting agent is overcome at an early stage that the process does not proceed from the one to the other with a culmination in the formation of an abscess instead of resolution.

During these periods of acute involvement we have but the palpating finger to guide us in interpreting the stage of the disease, and to determine when an actual pus cavity has formed. Here I cannot but feel that a close parallel can be drawn to a somewhat analogous infection; *i.e.*, acute epididymitis, where it was long considered that only infrequently did actual abscess cavities form, until Hagner, in operating upon all such cases, demonstrated that pus, in macroscopically visible quantities, was present in 80 per cent.; and as in epididymal so in prostatic infections, especially when gonorrhœal, is it probable that macroscopic pus is pres-

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ABSCESS OF THE PROSTATE

ent much earlier than now believed, and that early and free incision with drainage should be instituted as soon as diagnosis is made, so as to conserve the vital function.

It is the tendency of most physicians to feel in regard to prostatic abscess much as they do towards every acute ailment of the active generative organs in the male, that any infection of a pus-forming character is, *ipso facto*, of gonorrhœal origin: the contrary being shown by this short series of cases that I have personally observed is one of the interesting features to which I draw your attention.

The series comprise sixteen cases, eight of them were associated with the presence of the gonococcus and a history pointing to this infection being the cause of the abscess formation. An equal number, eight, were non-specific in their origin and form an interesting diversity of causes. Analyzing first those that were definitely post-gonorrhœal, we find that they, too, have interesting features that I will enumerate but briefly.

In one an interval of twelve years had passed since his acute urethritis, the patient had been married and left a widower, had during this time suffered from a mild, thoroughly chronic discharge, and after an alcoholic debauch, devoid of sexual exposure, he developed an acute urethritis. Gonococci were present, and shortly thereafter a prostatic abscess. Of these eight post-gonorrhœal cases but one was operated upon with drainage of the abscess. In four patients the course was uneventful, and early subsidence of all symptoms was followed by an apparent complete resolution without rupture. This was a most happy outcome for one of them, for he had multiple œsophageal strictures of small calibre from typhoid ulceration, and a urethral stricture of almost filiform size. In two others, who went to complete resolution, an acute epididymitis was associated and the prostatic involvement was especially marked on the same side as the epididymal. The remaining one where resolution took place was first seen under circumstances that countermanded operative interference. In the sixth post-gonorrhœal case, spontaneous rupture into the urethra occurred twelve hours after diagnosis was made, with a rapid subsidence of all symptoms. In the seventh, the abscess was purposely ruptured by a sound in the urethra—a most unsurgical procedure—and the eighth case was seen in consultation and lost to further study, although reported to have resolved without rupture.

So we have eight cases clinically diagnosed as prostatic abscess, secondary to an active gonorrhœal arthritis. One was operated and drained perineally; one was ruptured on a sound in the urethra; one ruptured spontaneously; four passed to complete resolution under local treatment, and one was lost to further observation. The series is too small to draw deductions from, but it does point out that there are varying degrees of pathologic involvement from this infecting organism. That in some with good judgment you can save your patient an operation, while in others resolution cannot be expected, and for them we know that it is better to operate and drain perineally than to allow urethral rupture. This group includes one where personal desire countermanded an operation definitely indicated. There was a large fluctuating mass in the left lobe, temperature of 102.5, white blood cells, 15,600, urinary strangury, chills, etc. Local treatment was instituted, two days later the temperature was falling, and

the white blood cells were 14,200; the following day the temperature was normal and the white blood cells 12,400; and the next day it was down to 11,000 with the temperature remaining normal. His subsequent recovery was perfect, complete resolution followed, with certainly no rupture, and it has been surprising to see in the four cases so treated what rapid and complete resolution can take place. The right lobe was affected twice, the left lobe a similar number of times, and four times the involvement was general. Gonococci were present in seven cases from the urethral discharge, and were demonstrated in the one case operated upon.

Though the course pursued in these cases, with the exception of one, was non-operative, and though the results could possibly be used as an argument in favor of local, palliative treatment, the after-results oftentimes seen at intervals of years, from cases which were allowed to rupture into the urethra spontaneously, or to resolve with a chronic prostatic infection present, show conclusively that here, as in similar conditions elsewhere in the body, where pus has once formed, surgical intervention and proper drainage afford the patient a surer chance of a complete physiological restitution of function.

Frequently we see cystoscopically a condition in the prostatic urethra, first pointed out by McCarthy, where large scarified prostatic duct orifices penetrate to unknown depths into the gland tissue. These are now known to be the residuum of such infections, and as such form almost permanent foci of infection due to poor drainage and scar tissue, and incapable of ever returning to a normal state. Without doubt, such permanent damage may be avoided by early operative interference, and the degree to which such injury may develop will be illustrated by two of the cases about to be reported in the non-specific group.

In the second group of eight cases gonorrhœa played no antecedent rôle. These are by far the more interesting cases. The possibilities as to origin of infection, the type and virulence of the organism, the ofttime complete masking of all symptoms pointing to the actual seat of the disease, the rapidity of some cases and the latency of others, make an ideal field for differential diagnosis.

Of these eight non-specific cases, instrumentation was responsible in four of them. The first consulted a specialist for a slight mucoid discharge. For a month he was given prostatic massage and "deep injections." Following one such treatment he developed within forty-eight hours all the symptoms of an acute infection of the prostate—there was a chill, fever, with a temperature of 103, hæmaturia, and vesical tenesmus. The diagnosis of an abscess was easily made by rectal examination. An acute epididymitis developed the following day. Palliative treatment was requested, and under local applications complete resolution took place slowly and without rupture of the abscess. In the second case, age twenty-eight years, there had been a gonorrhœa nine and two years previously. Three weeks before hospital admission, after a walk in the cold, he developed a chill and fever, with a temperature of 103, and pain in the right chest. Treatment was given by his physician and two days later the chest pain was gone. Ten days before admission he developed retention of urine following the passage of a sound, which had been unsuccessful and had caused bleeding. Pain began within twenty-four hours and

ABSCESS OF THE PROSTATE

steadily increased. On entrance to the hospital his temperature was 104, and his white blood cells 19,600. The entire prostate was involved in the abscess formation and presented a mass extending as high up as the finger could reach. Operation showed a large pus cavity especially located in the right prostatic lobe, with a marked indurated cellulitis extending all the way down into the right crus penis. The organism was the *staphylococcus pyogenes aureus*.

The third case was seen while in the field with the A. E. F.—a man, fifty-two years old, who had been told that he should have a sound passed every month because of an old stricture. His medical officer did this for him, and five days following the third passage of a sound there was a very gradual onset of acute symptoms, which in six days developed a fluctuating mass in the prostatic region. On account of surrounding conditions a palliative course was pursued for seven days in the hope that resolution would take place. However, at the end of this time the patient's condition demanded intervention, so under morphia and cocaine anesthesia perineal incision and drainage were performed, and a complete recovery was obtained in seventeen days. This was a most satisfactory case, as an invaluable officer was saved to the division for tremendously important work at the front in the September and October campaigns. Unfortunately the origin was not identified.

The fourth (now a patient in the hospital) gave a most unusual history. He was doing some heavy work in the army when seized with a sharp pain in the right groin. Hernia (according to him) was diagnosed, but unoperated, and in three weeks he was well. Before leaving the hospital in October, 1917, he was ordered to take a permanganate of potash irrigation. He remonstrated, not seeing its necessity, and was ordered to do as told. Some bleeding followed this, and he had complete retention for five days, having a catheter passed once in each twenty-four hours. On the fifth day he was seized with chill, fever and severe pain in the rectum, and was immediately operated upon for prostatic abscess by a perineal incision. The patient states that he "came to" six weeks later in December, 1917, and was told that he was a bleeder, and had had two transfusions to save his life. He was then voiding through his perineal incision and his urethra. In January, 1918, a sudden hemorrhage from his incision called for a third transfusion. In March a catheter was passed and again bleeding occurred of such alarming character that a fourth transfusion became necessary. Following this he developed a left epididymitis, which suppurated and was incised, and following this operation he first passed urine per rectum. Typhoid at fourteen, scarlet fever at eight, several teeth pulled as a child with no hemorrhage, but in 1908 an extraction of a tooth was followed by bleeding requiring packing, and in 1915 had a severe "nose bleed," brought on by sneezing, which lasted four days. Had had an appendectomy the same year without incident. This patient had a fistula certainly a centimetre in diameter extending directly through his prostate into his rectum. Three-quarters of his urine went through the fistula. He had bladder continence. So with such a history and a coagulation time of thirteen minutes, he will be left alone.

Again we have a case of a boy of twenty-three years, who entered the dispensary complaining of his inability to properly control his urine. For many years, in fact, as long as he could remember, he dribbled urine, which he now says he knows to have been due to the overflow of retention. This he has relieved during the past few years by the judicious use of a catheter. One and a half years ago he developed a swelling in the right lower abdomen, practically symptomless, which finally ruptured and discharged a large quantity of pus through the urethra. During the healing of this condition there developed an opening into the rectum, for since that time, when he gets over-distended, urine in small quantities passes into the rectum. There is never any feces or gas mixed with his urine. He has rectal control; in fact, is constipated.

ALEXANDER RANDALL

Cystoscopy (May 4, 1916): Bladder normal, urine slightly cloudy, left ureteral orifice not demonstrable. In the posterior urethra a large cavity was found extending back into the region of the right prostatic lobe, from which can be seen protruding a mass either fecal or calcareous. There is a small pocket also on the left.

Cystoscopy (May 12, 1916): Two calculi were found in the bladder. They were crushed with the cystoscopic rongeur. The prostatic cavity was clear.

Cystoscopy (May 19, 1916): Two more small stones seen in the prostatic pouch. These were picked up with the cystoscopic rongeur and placed in the bladder, where they were crushed at leisure.

Cystoscopy (May 24, 1916: Last calculi crushed. Reexamined January 17, 1917. Condition as before, no further stone formation. Patient is still using a catheter.

This boy's condition was due to *spina bifida*, demonstrated by X-ray, his sphincteric inhibitory fibres being undeveloped. His abscess was caused by his catheterization.

These last two cases illustrate the unfortunate results that may ensue from injudicious instrumentation, and the most distressing complication from prostatic abscess. In the former it was felt that so long as his vesical control was perfect from the good action of his internal sphincter, he had best be left alone, in the face of his history of bleeding. In the second, patient's undeveloped nervous system, though responsible for his trouble, was likewise considered his saving, as his spastic internal sphincter controlled his urine and any operative interference might make a persistent dribbler of him.

Again we have a student, thirty years of age, who during the preceding summer was studying abroad, and for recreation used to row a great deal, and as a result had a series of sores. The first were undoubtedly due to the rubbing of the boat seat—a condition so frequently seen in oarsmen—but they were succeeded by a series of similar infections elsewhere about the body, in several of which on culture the staphylococcus pyogenes aureus was the causative agent. About two and a half months after the first of these local infections, and after his return to the States, he was suddenly seized with rectal pain, chills, fever and a high leucocyte count. Prostatic abscess was diagnosed and operation proved the same to be the cause. The infecting agent was still the staphylococcus pyogenes aureus. No venereal infection.

The fifteenth case was that of a young physician. No venereal history. He had been in slightly lowered condition of vitality and health from his active rural practice, when he suddenly felt faint. Later he had a chill and was feverish. The only other promonitory symptom was that on the day before he had noticed some scalding on urination and found his urine scant and highly colored. He had been constipated for several days prior to these symptoms. His temperature was elevated on the above day of onset, and the following day it had reached 102, with pains down the legs, in the back and headache. There was a gradually increasing pain in the rectum. The following day, forty-eight hours from onset, after straining at urination there was a slight discharge, which increased rapidly at each urinary effort, and towards evening after one urination there was passed out a lump of mucus, followed by a profuse purulent discharge and blood. Condition from then on improved to complete cure. Smears from the discharge and also a culture showed *B. Coli Communis*.

The last case was seen on the Urological Service at the Johns Hopkins Hospital. The man was seventy-two years of age and gave a very typical history of gradual vesical obstruction due to enlargement of the prostatic gland over eight years' duration and with gradually increasing symptoms. Four days before his admission complete urinary obstruction occurred, associated with an elevation of temperature and very severe chill. Catheterization for the first time was easily performed, but without greatly easing the patient's discomfort. For fifteen days regularity of recurrent diurnal chills of the most intense type and subsequent

ABSCESS OF THE PROSTATE

fever elevation made the medical consultants feel practically certain that the patient had malaria, no matter what else he harbored, and this assumption was strengthened by the Virginia home of the patient, as also his past history. An elevated white blood-cell was against this diagnosis. Catheterization was easy, and even cystoscopy was performed. By rectum there was a large smooth prostate in no wise especially symptomatic or suspicious. He was treated expectantly. His temperature chart broke all the high and low records. At one time it varied from 96 at noon to 107.2 at 7.30 P.M., falling from there to 96.8 by 8 A.M., an excursion upward of eleven and two-tenths degrees and a fall of ten and four-tenths in the space of twenty-four hours. It was at this point that the surgeon stepped in, and knowing that there was urinary obstruction present—everything else being uncertain—started to perform perineal prostatectomy and drained a large prostatic abscess. The culture in this case showed *B. Coli*.

Summarizing the non-gonorrhoeal cases: one underwent resolution; one ruptured in forty-eight hours into the urethra; four were operated upon by perineal incision; and two presented the sad after-results of such infections poorly handled in having a urethro-prostatico-rectal fistula. In two cases *B. Coli* was the infecting organism, and in a similar number staphylococcus pyogenes aureus.

In regard to the mode of approaching a prostatic abscess for drainage, there are four possible and recommended routes: First, the purposeful rupture on a sound in the urethra, a procedure blind, dangerous, hemorrhagic, destructive, and non-surgical in the extreme. Secondly, the drainage into the rectum, again non-surgical, and because of the tension of the parts offering very poor drainage. Thirdly, there has been recently proposed a perineal incision into the urethra, followed by the introduction of the finger into the posterior urethra and digital rupture of the abscess through the posterior urethral wall. As above pointed out, the future repair of such openings is oftentimes the cause of persistent sinuses in the prostatic urethra and the cause of chronic prostatic irritation; moreover, the author of this recent article advocating such an approach drains by passing a tube into the bladder and allowing the purulent discharge to drain around this to the perineal dressing. Again I cannot refrain from calling this method non-surgical, for it certainly opens up avenues for the infection to spread that are absolutely unnecessary.

The choice, then, remains to expose the posterior surface of the prostate through the perineum, incise directly and under the eye's guidance the actual seat of infection, place therein tube and gauze drainage; the whole performed without injury to either the urethral or the rectal surfaces, they being left to perform their respective functions as usual, and without danger to their normal continuity.

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