ter getting paſt the ſphincter of the bladder, and cannot be puſhed farther without conſiderable force, and at the ſame time giving the patient the moſt exquiſite pain. Nor ought the operation to be performed when the bladder is ulcerated, eſpecially where the patient is old and much debilitated, and where the diſcharge of matter is great.

Children more readily recover from the operation of li­thotomy than adults ; and old people from the age of 55 to that of 70, whoſe constitutions have not been broken, are in leſs danger than thoſe in the full vigour of life, probably owing to inflammatory ſymptoms being more apt to proceed to a dangerous length in the extremes of age than at the middle period of life. When the conſtitution, however, is not much impaired by the continuance of the diſeaſe, the operation may be undertaken with a probable degree of ſucceſs almoſt at any period of the patient’s life.

Several methods have been recommended for performing this operation ; but there are only two which can be prac­tiſed with any propriety. One is, where the operation is to be performed immediately above the pubes, in that part of the bladder which is not covered with peritonæum : the other, where it is done in the perinæum, by laying open the neck and lateral part of the bladder, ſo as to allow of the ex­traction of the ſtone.

Franco, a French ſurgeon, finding a ſtone in a child of two years of age too large to be extracted through an open­ing in perinæo (the place where the operation was then performed), was induced to make an inciſion into the blad­der above the pubes ; but though the ſtone was extracted and the child recovered, Franco, who publiſhed the case in 1561, never attempted the operation again, and even diſſuades others from doing it. It does not appear indeed to have been much practiſed anywhere till ſome time after the commencement of the preſent century, about the year 1720, when it was adopted and frequently performed in Britain and other parts of Europe for the ſpace of about 12 or 15 years. The lateral operation came then to be more generally known, and ſince this period the high opera­tion has been ſeldom practiſed.

In performing the high operation, the bladder muſt be in a diſtended ſtate, ſo as to make it rise above the ossa pubis, to allow an inciſion to be made into that part of it which is uncovered by the peritonæum, and thereby to prevent the abdomen from being opened or its contents expoſed. Some days, or even weeks, previous to the operation, the patient ought to be deſired to retain his urine as long as he can, ſo as to diſtend the bladder till it can hold at leaſt a pound and a half, when the perſen is an adult and of an ordinary ſize ; or the penis may be tied up to allow the urine to col­lect. As theſe methods may be attended with great diſtreſs, ſome prefer diſtending the bladder by injecting warm water by slow degrees till the bladder is ſufficiently full, which may be easily known by relaxing the abdominal muſcles and feeling above the pubes.

When the operation is to be performed, the patient is to be laid upon a table of convenient height, with the pelvis higher than the ſhoulders, that the parts may be fully on the ſtretch, and to prevent the bowels from pressing upon the bladder. The legs and arms are to be properly held by aſſiſtants. An inciſion is to be made through the ſkin, in the very middle of the under and fore part of the abdomen, from ſome way under the umbilicus to the ſymphyſis pubes. The cellular ſubſtance, the tendon of the oblique muſcles, the muſculi recti and pyramidales, are now to be ſeparated ; and it is better to make this ſeparation from the pubes upwards, ſo as to be in no danger of cutting into the abdomen. The ſurface of the bladder will now appear un­covered by the peritonaeum. Then the operator, with a common ſcalpel, or an abſceſs lancet, or, what is better, with a concave ſharp-pointed knife, makes a perfora­tion into the moſt prominent part of the bladder, till the fore-finger of the left hand can be introduced. The liga­ture is now to be removed from the penis ; then with a probe-pointed bistoury, making the finger ſerve as a conduc­tor, the wound is to be made ſufficiently large for the ex­traction of the calculus, taking particular care, however, not to carry the inciſion ſo high as to cut the peritonæum. This part of the operation being finiſhed, the ſtone is to be extracted with the finger ; or if that be impracticable, the forceps are to be employed. Should it unfortunately hap­pen that the ſtone is broken in the extraction, the pieces are to be removed entirely by the fingers rather than by ſcoops, which were ſometimes uſed. The edges of the wound in the integuments are now to be drawn together by means of the twisted future, leaving about an inch and a half immediately above the pubes for the diſcharge of any urine which may be there evacuated. The patient is to be laid in bed, with the pelvis ſtill kept higher than the ſhoulders. Gentle laxatives are to be occaſionally given, and the antiphlogiſic plan ſtrictly adhered to.

The advantages of this method are, that larger ſtones can be extracted by this than by the lateral operation, and that fiſtulous sores are leſs apt to enſue. The diſadvantages are, the danger of opening or wounding the peritonæum, and thereby expoſing the abdominal bowels ; the frequent oc­currence of inflammation about the beginning of the ure­thra, ſo as to occaſion the urine to be diffuſed in the cellular ſubſtance on the outſide of the bladder, and thereby produ­cing ſinuſes difficult to cure ; the extreme difficulty of heal­ing the wound, eſpecially in bad conſtitutions ; and, laſtly, the ſmall number of patients, after the age of thirty, who have been found to recover from this operation.

Frere Jacques, a French prieſt, was the inventor of the lateral operation. He first appeared at Paris in 1697, and afterwards operated in a great number of caſes.

He introduced a found through the urethra into the bladder with a ſtraight biſtoury, cut upon the ſtaff, and carried his inciſion along the ſtaff into the bladder. He then in­troduced the fore finger of the left hand into the bladder, ſearched for the ſtone, which, having withdrawn the sound, he extracted by means of forceps. The patient was now carried to bed, and the after treatment left to the attend­ants.

Profeſſor Rau of Holland improved upon this method, by making a groove in the ſtaff, which enabled him, with greater certainty, to continue his inciſion into the bladder: but inſtead of dividing the urethra and proſtate gland, the latter of which he was afraid of wounding, he dissected by the side of the gland, till the convex part of the ſtaff was felt in the bladder, where he made his inciſion, and extract­ed the ſtone ; but this method was too difficult to perform, and attended with too many inconveniences and dangers ever to be generally received. It ſuggeſted, however, to the ce­lebrated Cheſelden the lateral method of cutting, as it is now with a few alterations very generally practiſed. We ſhall attempt to deſcribe the different ſteps of this operation in its preſent improved ſtate.

The manner of preparing the patient depends upon a va­riety of circumſtances. If he be plethoric, a few ounces of blood ſhould be taken away, and at proper intervals the bowels ought to be emptied by any gentle laxative which will not gripe. The diet ſhould conſiſt of light food for ſome time previous to the operation. If the pain be vio­lent, opium is necessary. Sometimes it is relieved by keep­ing the patient in bed with the pelvis raised, ſo as to remove the ſtone from the neck of the bladder. He ought not to