

Miller

1859.

a very good essay -

"Excision of the Knee joint"
By
Wm. Evelyn Abston.

The subject of excisions, is one of so much importance and interest to the practical Surgeon, that I have been led to take up one application of it as the subject of my thesis.

I choose excision of the Knee joint, because although much has been written lately on this point by men of experience and ability, there still exists I repeat to say a certain amount of dislike to the operation, which time seems but slow in dissipating. And this is the more strange and un-accountable, when we look at the results that have followed the excision of the two sister-joints, the elbow and Shoulder; results so successful, that this procedure is here

Now the rule, an exceptional case seldom occurring which justifies a departure from it. It is however difficult to root out old existing prejudices, to throw aside the cherished teachings of some bright surgical luminary of the past, and to reason out a debated question with calmness and disinterestedness. The objections that have been brought forward as arguments against its adoption are numerous but not insuperable, then I shall consider more in detail hereafter, the risk of opening a joint, the shock, the great danger accruing from, or likely to follow, the exposure of so large a surface of cancellated structure to air in which suppuration is going on, the great risk consequent of Pyæmia, and many others, are objections which are continually being urged against it by those who on theoretical grounds alone feel it their duty to be journalists.

Improvements however in pathology, & treatment, the rules we are gradually obtaining for the better discrimination of cases, these though still imperfect, and falling short of what

* Med. Times & Gazette August 7th 1857

* This reference has been by mistake inserted
here - it refers to the case of Dr. Keith
mentioned on page 9 -

I hope will ultimately obtain, are all doing steadily and surely their work—

From the very nature of the science, Surgery can never hope to take its rank as an exact science so called, though there are some, and they not a few, who would wish to make disease, symptoms, and treatment, one unvaried cycle of events and establish laws like those of the Medus & Processes, unalterable and irrevocable. Such I need hardly say is not the position I should like to see Medicine take.—

An eminent Surgeon speaking quite recently on the subject of amputation of the knee joint, says that if it could be discolled wholly of its concomitant dangers, it would be the most brilliant triumph in Operative Surgery; Mr. Key like most like but few dissentients to an opinion so axiomatic; I should be rather disposed to say that notwithstanding the dangers that follow it, it is not the less an improvement on that wholesale destruction of limb in a disease so local as scurvy disease of the knee joint,

Which characterized the practice of Surgery previous to its introduction -

I am not blind however to its dangers, Pyaemia, that terrible agent of death, terrible from its very mysteriousness, so inimical to all the best directed efforts of the Surgeon, I do not look here, as it does too frequent -ly under circumstances less favorable than - singly in its development - but not this I brought forward as an objection then -

I would ask, is any fundamental rule, any law established principle of Surgery, any thing opposed even to our common - sense, violated by its adoption? I think with due deference to the opinions of others, many of whom are pre-eminent and deserv -ingly so in the ranks of Surgery, and whose opinions are entitled to the best con - sideration of those whose duty it is to differ from them, that no such objections can be brought forward or admitted as arguments against its adoption.

Results however must and will occur, but they ought to make the Surgery more

* Stanley on diseases of the bones.

pp 246.

* Brodie on diseases of the joints.

2nd edit. pp 240.

* Bostock on the Epidemic after E.

page 9. —

Careful in detail, more circumspect in the cases he selects, and prone to attribute some portion at least of the disastrous result to his own imperfections and shortcomings, rather than throw the whole onus on the operation itself, and condemn it therefore as un sound in principle and ill-advised as a practical procedure—

In the following pages it will be unnecessary for me to enter at any great length into the morbid affections of these joints, subjects highly interesting, and on which every well educated surgeon is or ought to be acquainted with; but shall confine myself more particularly to ^{two} special forms of disease which in conjunction with this operation are of so much importance —

The knee-joint as is well known may be affected in various ways, the mischief commencing primarily in the tissues external to it, and subsequently involving its special apparatus, or on the other hand it may originate in the Cartilages and bones entering into the formation of the joint. It is however

with that form of joint-disease in which the spongy structure of the ends of long bones is involved, like which we are most concerned, a specific form of inflammation possessing well marked stumorous characters, appearing for the most part among the poor and ill-nourished, or among those inheriting what is termed a stumorous diathesis -

Of this two varieties exist, one occurring in a diffused, the other in a circumscribed form, and most important these distinctions are when we come to consider the advisability or not of submitting the patient to this operation - I shall first speak of the diffused variety - Here the entire surface of the extremity of the bone is more or less infiltrated with the stumorous material.

It is ushered in by a low inflammatory state of the ^{open} network of the bone, the affected surface appearing congested and of a deep red color. The temperature of the part is slightly raised and some pain though not of a very marked character is felt, and if this early inflammatory condition be not arrested

Stenley on diseases of the bones

pp 246.

Brodie on diseases of the joints

pp 248.

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Changes of a most destruction character soon ensue, involving the whole structure of the joint. The bone expands and softens so that it may easily be broken up by slight pressure, the cancelli are filled with a cheesy or gelatinous material, and a chemical alteration in the constituents of the bone is brought about. The earthy material which forms so considerable a portion of healthy bone gradually diminishes, and in not a few cases almost entirely disappears, "so that the shaft of a bone becomes converted into a thin shell of earthy matter, enclosing a medullary cavity of unusual magnitude". Ulceration soon follows, destroying the cellular structure of the bone, and the softened-down deposit, finds but a too ready escape through the already thinned walls - And this is not all, for 'ere this change of a destruction character has commenced and are going on in the cartilages themselves, giving rise to an amount of pain and distress which soon exhausts the powers and spirits of the

of the already debilitated patient, and
 forming another channel by which the visi-
 tating matter from the diseased bone finds
 its way into the cavity of the joint. The
 synovial membrane becomes altered in struc-
 -ture and its functions destroyed, the
 ligaments constantly on the stretch from the
 increased size of the joint, soften and permit
 luxation to take place, and finally sub-
 -speration and complete disorganisation
 of the joint results. Such then is an im-
 -perfect description of a disease in
 which the reparative process is never set
 up, and a little consideration will I am
 sure show the reason why cases of this
 diffused form of Scrophulous Inflan-
 -mation, in other words of Scrophulous
 Caries, can be successfully treated by am-
 -putation alone. For though an ardent
 admirer and disciple of the modern
 mode of dealing with diseased joints, I
 conceive not a little has been done
 to the cause of conservative surgery, and
 especially the application of it to this par-

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Mex: Times & Gazette Aug²: 7th 1857.

icular joint, by adopting it in cases
then physiology and pathology alike
would lead us to expect an issue un-
-favourable to surgery as well as patient.

A case which occurred to Dr. Keitt of Aberdeen,
and which has since been published, speaks
graphically on this point, and tells us that
~~we~~ we may expect in all similar cases.

The patient was a man at: 33. and the
disease had existed for eleven months -

Resection was performed on March 10th 1855.

An inch and a quarter was taken off the end
of the femur, and half an inch from the end
of the tibia; the bones were expanded and
every cell was filled with a cartilagenous
deposit, and an abscess containing a tea-
-spoonful of ripe pus was found in the centre
of the tibia; abscesses outside and around
the joint also existed, which were freely
laid open - Dr. Keitt then proceeds - "Well

" this case for every case that my skill could
" devise, I was desirous myself, and fought
" on for 222 days, and at last to save his life
" gave in, and amputated the thigh on

"October 20th 1853." and on November 30th he
 "was dismissed cured" -

The conclusion is obvious, for in this case it is evident that only a portion of the disease was removed, thereby running counter to one of the main requirements and conditions of the operation, and at the same time had the share of the infirmitas bone been sawn off and the patient recovered, it would then become a question whether the excessive shortening of the limb that must have followed, would not have proved a greater impediment to progression than a well adapted artificial limb -

I am well aware of the difficulty that still encircles the correct diagnosis of these affections, and the impossibility of satisfying myself with any thing like certainty of the extent to which the parts are involved.

I have seen limbs condemned to the amputating knife for an amount of disease which merited a less severe plan of treatment, and had it been diagnosed prior to its removal, would no doubt have

Accidents occur; and have witnessed this
 operation performed on joints in which but
 little idea of the extent to which the disease
 has proceeded, expected pain to the oper-
 -ation - How surely this is not a satis-
 -factory state of matters to be in, and
 although at present I do not see how
 the materials we possess for arriving at a
 safe conclusion in these cases can well be
 improved, still in a practical point of
 view much can be done to obviate the
 recourse to amputation in cases of doubtful
 character.

In order however for improvement to take
 place, new views must be adopted, practices
 once orthodox must now give way to the results
 of a more extended observation -
 As an instance of this I may mention the old
 plan of dealing with Actin suppuration forming
 on a joint, by means of a small puncture
 which used to be made, by means of which the
 air readily mixed with the pus, which thus
 becomes offensive and irritating, and being
 unable to escape freely, sinks to the bottom

of the articulation, giving rise not only to much local mischief, but increasing also the constitutional disturbance -

I thank however to Mr Gay a better plan of treatment now exists, for by freely laying open the joint, all this is obviated, & it is given to the pus, and the joint has a better chance of healing by healthy granulations -

A plan has recently been adopted by Mr. Butcher which offers a ready solution of the difficulties experienced in dealing with cases in which the nature and extent of the disease cannot be ascertained, and that is, in all these cases to make an exploratory incision into the articulation, and then ascertain the exact condition of the parts, and then to judge by circumstances as to the operation whether that of excision or amputation be the most advisable. This I have seen adopted in the ankle joint, and I can conceive no reason why the same principle should not be adopted like that of the knee, in the incisions with but little modification like

avail for either one or the other proceeding -
 If this was made the rule and not
 the exception as it too often is in such
 cases, I think much of the Opposition
 that exists still with regard to this
 operation would cease, and that we
 should hear far less frequently of second
 -ary amputations being required, as
 in the case of Dr. Keith's mentioned
 above.

We now come to consider the second
 form of this tubercular inflammation
 in which the tubercular matter is deposited
 in small quantity, and in circumscribed
 masses, in otherwise healthy bone,
 This too like the diffused form will
 sooner or later prove equally as des-
 -truction to the functions of the articu-
 -lation; but it still possesses well
 marked distinctive characters, which
 render it admirably adapted for
 the operation in question -

So important do I conceive these to
 be, that I must say a few words on

its pathology. I am well aware that a few years back a distinction like this was considered more theoretical than practical, and in those days when the amputating knife was the favorite and only legitimate way of getting rid of the offending part, the exact pathology of the disease entered but little into the mind of the so-called practical surgeon -

Instead of the destruction chemical changes which we found took place in the diffused form, along with a softened condition of the lutein cancellated structure, we find one of an opposite character occurring here. The periosteum undergoes a kind of chronic inflammation, and at the same time thickening and condensation of the bone surrounding the abscess occurs, and it is in consequence of this peripheral enlargement by the successive deposit of fresh bone that the subsequent destruction changes take place. For

The matter unable to work its way through the hypertrophied peripheral tissue naturally traverses that portion of the bone which offers the least resistance to its progress, that is, the surface in contact with the cartilages of the joint, where those changes of condensation and deposit cannot take place.

Now, the diagnosis of these cases is I confess one of no ordinary difficulty; and I am not aware of any one symptom sufficiently characteristic, to enable a surgeon to predict with certainty the exact condition of the parts, or the existence even of this affection —

The circumscribed sturmons infiltration of the extremities of the femur or tibia may exist for a very long period, without giving rise to any symptoms constitutional or local — Pain and some tenderness occurring over the bone on pressure, limited in extent, will attract the attention of the surgeon, though if the patient should be of an hysterical

habit, the diagnosis will be one of no ordinary
 difficulty; our treatment under such
 circumstances can I fear be only palli-
 -ative. As the disease however proceeds
 as it almost certainly will, and the joint
 becomes involved by the irritation that is
 set up, the disturbance and distress
 become more marked, and when any
 decided change for the worse occurs,
 then it is that we must begin to fear
 that ulceration has excited the contents
 of the contiguous abscess to find their
 way into the cavity of the joint; the
 tissues within soon become involved,
 and a train of symptoms are set up
 analogous to those dependent on strumous
 infiltration of the diffuse variety. Now
 although I do not deny that a case like
 this may recover without any
 operation whatever, still when we consider
 the length of time that must elapse,
 and the uncertainty that must exist
 as to the ultimate result; I cannot
 but conceive that a judicious operation

like that of resection of the diseased articulation will in general be the wisest and most satisfactory proceeding - In these cases cut a small slice from the ends of the two bones, together with a free use of the gouge to clear out thoroughly the contents of the abscesses if more than one exist, make all that is required, and if this be done with care and a freely bleeding surface be obtained, but little fear need be entertained of union taking place, provided the plan of treatment hereafter to be mentioned, be rigorously adopted.

It is of course quite impossible to lay down definite rules for the treatment of these affections, still amidst the peculiarities and points of difference that exist in almost every case, certain features I think will be found even to be present to guide the Surgeon to a right appreciation of the case under him - I have now finished what I have to say on these two highly interesting and

instruction forms of sturmons disease,
 and I have been led to consider them
 more in detail because the distinction
 that exists between them is not as a rule
 sufficiently dwelt on in connection with
 this question, and its practical bearing
 not so thoroughly appreciated as its
 importance deserves - As I have mentioned
 before, it would be taking up too much
 time were I to enter into lengthy detail
 upon the diseases of this articulation which
 may with advantage be thus treated.

Were I to do so, I should merely have
 to take Brodie or Paget for my guide,
 and give the results of their observations
 so well and clearly expressed in their
 own words, in language of my own -

The condition of sturmons or pulps
 degeneration of the synovial is now fully
 recognised and understood; and the
 researches of Mr Redfern on the nature of
 cartilages leave but little else to be
 said on that subject. - I shall therefore
 I think best conclude this part of my

paper, by stating, that I believe two
 diseases only exist, which are unsuit-
 -able to the operation of excision, and
 then an malignant disease involving
 the bone or soft parts of the articulation,
 and that form of strumous infiltration
 which I have considered in a previous
 page. When therefore disease, other than
 the two mentioned has existed for a length
 of time, when all palliative treatment
 has been tried without success, when the
 pain and distress become aggravated, and
 the constitution begins to sympathize with
 the local disease, then it is, that the
 judicious surgeon acting on the first
 principles of his proposition, will step in
 to remove, by an operation comparatively
 bloodless, and productive of but slight
 shock, a disease purely local, but
 showing its effects on distant parts of the
 frame, and involving the general system
 of the patient.

Syng on Division of the diseased joints.

pp 133.

Syng of Joints. Mentioned in Richman's Surgery.

pp 656.

Having thus spoken of the diseases which I consider may be successfully treated in this way, I come now in the next place to consider shortly the operation itself. The steps required do not generally present much difficulty, except in a few instances when a bent condition of the limb exists and consequent contraction of the ligaments and tendons in the neighborhood of the joint. A variety of incisions have been recommended and adopted - two semicircular incisions in front of the joint and meeting at their extremities so as to include ^{the} patella - a horse shoe, or single semicircular incision so that the ligamentum patella is preserved and during the steps of the operation may be pushed to one side - and lastly an H incision, which is the one now generally preferred - 13) means of any of these methods the joint may be readily exposed, and the operation completed; but this is not the only point to be considered, for we have to provide

In ^{the} free suppuration that follows, and
 our incisions ought to be planned
 that a ready outlet is secured for
 the discharge. I am quite certain that,
 from what I have seen of this operation,
 much of its success depends on this
 particular being carefully carried out,
 and it is for this reason that I feel dis-
 posed to regard the H incision as the
 most preferable, though even here in
 some cases the long longitudinal cuts
 have not been sufficient for this purpose,
 and it has been found necessary to
 make additional openings in the ham
 to liberate the put-up pus, and prevent
 its running in the soft tissues. The
 relief following has always been well marked.
 I cannot too strongly recommend the
 free use of the probe on all parts possessing
 a suspicious appearance, for if this be done
 properly, it will obviate the necessity of
 removing any but thin slices of bone from
 the tibia & femur, though I am aware in
 limbs much deformed and where much



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Pictorial. Science and Art of Surgery

No 656.

Much contraction of the soft parts exists, a wedge-shaped piece of bone will require to be removed, before the two surfaces of bone can be placed in apposition, here however previous division of the tendons will facilitate the procedure.

I see that Mr. Litcher recommends that the tibia be sawn from behind forwards by means of a Butcher's saw, I have seen this done, it seems so excessively awkward a way of applying a saw, that I can hardly understand what supposed advantage it can have over the more natural and convenient method of applying it from before backwards - Another point of some interest and importance is the propriety of removing the patella even when sound - When this operation was first introduced, the preservation of the bone was considered of much importance, as by its union with the surface of the tibia & femur ^{was} ~~was~~ increased solidity and strength to the apposed surfaces of bone -

In those early days of excision of the knee, it was thought that bony union took place but seldom between the ends of the two bones, a more or less ^{firm} fibrous membrane being the conducting medium in the majority of cases, hence across the importance of preserving a bone which was regarded pretty much as taking the place of a splint.

In an ordinary fracture -

Experience has now taught us to modify this opinion regarding the mode of union that is adopted in these cases - Undoubtedly in the greater number of cases the union by fibrous tissue obtains, though in a few cases new bone appears to the eye but from the commencement, and firm osseous union is the result. If however in such these cases in which some slight motion is perceptible, in other words those cases in which union by fibrous tissue exists, in any length of time; we shall find this movement become less evident as time rolls on, till at length all motion is lost, and a firm unyielding osseous union is the

result. This is now a fact well known
 to those who have had the opportunity
 of watching cases of resection of this artic-
 -ulation. In connection also with this
 subject the clinical history of the operation
 teaches us that in those cases in which at the
 time of the operation the patella is found
 not to have been involved in the general
 disease of the articulation, ^{and} when it
 has been allowed to remain, subsequent
 disease has appeared in it giving rise
 to much secondary irritation, and
 preventing any further reparatory process
 going on in the part and then a second
 operation in the removal of the offending
 body has been required. This procedure
 together with the additional irritation set
 up in the part, must add materially to
 the danger of the operation, and by prolonging
 the period of confinement must tend to
 modify very greatly the ultimate result.
 I was long much struck with this fact in
 a case which I saw, and had an oppor-
 -tunity of watching from beginning to end -

The patient was a young man, and at the time of the operation the patella was found to be perfectly healthy, and was consequently preserved; he went on very well for some time, the parts had nearly healed, and there seemed every prospect of his making a speedy and satisfactory recovery; presently however he began to experience pain in the limb from which he had been entirely free since the operation, the parts became swollen and a large quantity of ill-conditioned pus was discharged from the opening - this state of things brought the patient to a very low ebb, and it was not until all hopes of a healthy action setting in were given up, that it was determined to remove the patella, this was done three months after the first operation, and extensive disease was found in it and the ~~soft~~ parts adjacent, which appeared to have undergone a change somewhat analogous to the putty degeneration met with in the synovial membrane.

The patient however never entirely rallied
 and ultimately sank. Here, we cannot
 but attribute the disastrous result to the sym-
 -pathetic Constitutional irritation dependent
 upon the occurrence of so much additional disease,
 commencing in all probability in the pectoral
 and partly, though in a less degree in the
 shock attending the second operation —
 In looking over the different Medical journals
 I find that this complication has happened
 to several surgeons, and has indeed
 many therefore to remove this one at once —
 and it has been found that the utility of
 the leech is in no way interfered with by
 such a proceeding — On the whole then I
 do not think we ought to throw away
 the valuable lessons by experience here teaches
 us, doubtless valuable from being bought at
 so heavy a price, as life — And taking them
 into consideration the fact that my opinion
 does ultimately obtain in most if not all cases,
 that this one is especially prone to become
 involved in secondary disease, I cannot
 but think that the advantage of additional

Support obtained by retaining it, is
 more than counterbalanced by the addi-
 tional risk the patient runs of at some
 subsequent period being compelled to
 undergo an operation for its removal.

Now come to consider a point on which
 all surgeons who have had much practical
 experience of the operation lay so much
 stress, feeling as they do that most of the
 ultimate ^{results} must depend on a careful
 subsequent treatment. Now in this operation
 it is necessary, that the limb be kept in
 an absolute state of rest at all times, even
 during the daily dressing that it receives,
 that the bony surfaces be kept in close appo-
 sition and at the same time care being
 taken that no undue pressure be applied.
 These conditions guide our treatment in
 ordinary fractures, but if their careful
 fulfilment be necessary in securing
 success in these cases, it becomes doubly
 imperative here. Thus an Ilium is

Cases that require a greater nicety of position
 up, greater delicacy in handling during
 dressing, or more scrupulous attention to
 clean lines than those of less extent of the
 knee joint. In cases which hold in all
 probability to under treatment a somewhat
 lengthy period, the comfort of the patient
 as well as the convenience of the Surgeon ought
 carefully to be considered. It is surely neither
 one or the other of these points can be carried
 out by a single long splint which has to be
 removed day after day to allow the neces-
 -sary dressings to be attended to, neither
 also do I see the advantage to be gained
 by leaving the limb altogether without
 support for a few days, whilst the use of
 pillows, sack-bags, starch bandages, must
 tend to render the subsequent treatment a
 tedious and difficult process.

The plan I have then adopted is one which
 I cannot too highly recommend for its
 efficiency and for the ease with which it allows
 all dressing to be performed, and also for the
 comfort which it administers to the patient.

An important element in the plan of treatment is the use of an apparatus by which the entire limb is capable of being swung, the degree of elevation being capable of alteration by means of a chain and hook attached to a horizontal bar of iron and from which the limb is suspended. The chain also which supports the string in which the limb is placed, is attached to wheel (two in number) which can run along the horizontal bar. By this contrivance the patient is enabled to lift his limb continued and in some position, without displacing or in any way interfering with the condition of the limb. This apparatus is now well known under the name of "Pattis String" and whether for the treatment of ordinary fractures or of excision, is a most valuable adjunct to our surgical appliances. From the peculiar requirements of the after-treatment it will be found that our ordinary fracture splints will be insufficient to ensure that perfect rest of the parts, and allow of that constant attention to the dressings, a point of so much

Lancet: Jan 24th 1867.

importance when a purely suppurating surface is present - The Splint I believe that is best adapted to these cases is one described by Mr. Price in one of the journals, in which also is a very good illustration of an "Exercise apparatus" complete - This is nothing more than an ordinary McJannet, dissected, the two portions being connected by a narrow plate, and capable of being separated by a screw, so that this portion may always correspond to the popliteal space - The lower portion of the splint is also provided with a broken footboard which can also be adapted to the length of the limb by means of a slide in which it runs. Besides this a side splint is also used, furnished with "eyes" which let into corresponding hooks on the outside of the splint - This splint instead of being made of a continuous piece of wood, is interrupted in the middle, the two portions being connected by means of a stout iron hook, wide sufficiently high, so as to admit of the most ready access to the wound, without necessitating any disturbance of the apparatus; the narrow

The over central portion of the McIntyre also
 fulfils the same object; while the side-splint
 is furnished with a spiral band of which
 moderate extension of the thigh is regulated
 and a perfect state of rest is also more
 completely assured - The only other point
 to be mentioned is that one-made broken
 pads, accurately fitting the splint, and
 covered over with oil silk may be
 employed, as it would be highly injudicious
 for the first few weeks to be obliged to change
 pads which cannot well be reached
 without taking down the entire apparatus.
 I do not think the side-splint absolutely
 necessary, though I think it may often be
 employed with advantage in the case of
 children, who are not so readily impressed
 with the importance of remaining quiet, as
 adults. The foot should be first rolled to
 the foot-board, the heel carefully supported
 by some soft material, and subsequently
 the whole limb carefully bandaged to the
 splint, leaving sufficient space about the
 wound, uncovered - The side-splint

Carefully padded can be now applied in the same way as the ordinary long splint used in fracture of the femur, and kept in contact with the limb by means of strips of webbing - I have now entered somewhat into detail upon the mechanical portion of the treatment required; the rest of it will be more didactic than medicinal; usually an opiate is administered after the operation, but I think as much upon the ground of custom as anything else. In this operation I am certain in many cases it is not needed, for if there be no symptoms or but a mere emolument or mere marked, it is the entire freedom from pain and the ease the patient experiences; why then give opium? if not positively hurtful it is negatively beneficial - A simple and nutritious diet with a moderate daily allowance of stimulants should be the most beneficial, and the best form for its administration. I believe the brandy, first because it is more readily obtained pure and secondly, because in this day we are better capable of regulating the absolute amount of alcohol, which has so indefinite

and variable a proportion, at least in the
 Port-Vine of our Hospitals, to its other ingredients.
 The beneficial effects arising from a daily
 allowance of brandy, say ʒij - ʒiij, in the
 cases of Scrophulous and ill nourished patients
 withy striking, and although this is commonly
 contrary to the opinion and practice of many,
 I shall not be readily inclined to give it up
 I have then pointed out, and very briefly
 I fear, some of the main points that ought I
 think to be more especially kept in view in
 the treatment of these Cases; there are still
 some little points of detail that I have not
 entered upon, the ordinary Principles and
 rules of practice will be sufficient guides
 for their detection and proper Management.
 I shall now in the next place proceed to
 consider very briefly some of the objections
 that have been urged against its perfor-
 -mance; and bring forward some
 reasons why I think it is an Operation that
 may with advantage in many Cases take the
 place of Amputation of the thigh. —

Mem: Jones & Gazette April 16th & 23rd 1859

Peak. On amputation by rectangular flaps

The objections may be classed under two heads - (1) its dangers - (2) its results.

Now the only way by which we can arrive at a conclusion on this first point is that furnished by statistics; and so recently as April last a paper containing the results of all the cases in which the operation has been performed from the time of its revival in 1850 to that date, has been published, to which I must refer you in minute details. The main points are however so important, that I must mention them here.

It appears then that from 1850 to 31st of Decr 1858 this operation has been performed ^{on} 160 occasions, out of these 6 or 7 were for deformities, one for accident - * of the total number of cases 32 proved fatal, or 1 in every 5.

Now in looking at the results of amputation of the thigh I find that out of 303 amputations performed during the three years 1854 - 57 both in the London & Provincial hospitals, 91 fatal cases occurred, the ratio being 1 in every 4 in the Counties and 1 in every 4½ in

Letter March 12th 1859.

town. Now if these figures can be relied on
 and they are given on the authority of those
 whose words we have no reason to question,
 surely it displays a poor amount of igno-
 -rance of facts in those who are still con-
 -tinually bringing the increased rate of
 mortality that occurs here, as an objection
 against it -

Another interesting fact that these statistics
 show is, that out of these 32 fatal cases 8
 died of Pyæmia, 6 from exhaustion, 5 from
 emolition, and 4 from shock -

Those therefore who bring the frequent occurrence
 of Pyæmia as an argument against it, can
 be but little aware of what these figures
 teach us - Here as in Amputation of the thigh
 Pyæmia heads the list, but with different
 results; 25 per cent of the deaths occurring, after
 excision are due to this, but in a paper recently
 read before the Royal Med: Chirurgical
 Society by Mr. Bryant, he shows that in
 300 cases of Amputation of the upper and lower
 extremities the per-centage of deaths from this
 cause was 43 per cent -

May not this difference be due to the fact that
 in one case the Medullary cavity is laid
 open, in the other it is not interfered with?
 It would seem from these tables, that when
 amputation has been resorted to as a
 secondary procedure, that the mortality
 does not seem to be increased - for out
 of these 160 cases, 10 required amputation,
 and that only in one case did a fatal
 result follow, certainly a very remarkable
 result.

Some of the points connected with the ^{2nd} class of
 Operation have already being considered,
 as the question of osseous Ankylosis occurring,
 and also as to the probable utility of the limb,
 then I need not enter into again, suffice
 it to say that excision of the knee can be done
 in 6 weeks, and as has been very properly
 remarked, though the amputation wound may
 be healed in 3 or 4 weeks, it may be as many
 months before an artificial limb can be worn,
 and even if a few additional weeks be devoted
 to the period of convalescence, provided that
 a useful limb be preserved to the patient, it can

Matter but little

From then a careful consideration of all the facts brought before us, whether he regard the diminished ratio of mortality, or the immense advantage that accrues to the patient from the preservation of his limb; I think that but one conclusion can be come to, but the verdict given by the impartial Surgeon, and that verdict must be in favor of an operation which notwith standing its risk, failure, and partial success in some cases, and then happily an exceptional case, has been results so important ~~and~~

There are still some points connected with the subject, which I should like to have said something upon, and which perhaps I may be blamed for then passing over, still I trust I have not overlooked any of importance - Time has ~~been~~ been short; and I would wish this to be regarded not so much as a formal paper embodying all that is known on the subject, but as containing merely a few scattered remarks founded upon a fair experience of the operation in question.