

The Treatment of Labour in Contracted Pelvis.*

By PROFESSOR F. SCHAUTA,
Honorary President of the Society.

MR. PRESIDENT, ladies and gentlemen, fellows of the Glasgow Gynæcological and Obstetrical Society. You have done me the honour of electing me Honorary President of the Gynæcological Society for 1907-1908. According to the rules of your Society, it is my duty to deliver before you an address during that time. Of the themes, the choice of which has been left to you, you have selected the subject "Labour in Contracted Pelvis." Thus, I appear before you to-night to speak in a country in which the science of contracted pelvis has been made classic.

Your great countryman William Smellie, born in Lanark in 1697, must be considered as the real founder of the science of contracted pelvis. Obstetrics is indebted to him for the science of the mechanism of parturition, the first knowledge of the normal and pathological pelvis, and the measurement of the diagonal conjugate. He takes a firm stand against turning in contracted pelvis, as thereby the child is too much endangered, and also against the application of forceps above the brim. In order to restrain young practitioners from using the forceps in cases where the head is above the brim, thereby occasioning injuries to the mother, he recommends a short forceps, without pelvic curve, to be used only when the head has entered the pelvis.

This view of discarding turning and the application of forceps above the brim is now again being revived by German obstetricians.

Regarding the rejection of the forceps, Smellie found powerful support in his countryman William Hunter. Indeed, Hunter went, in his views, beyond the standpoint of Smellie. The rejection of turning and forceps necessarily demanded the search for a substitute at a time when Cæsarean section was considered a deadly operation, and symphysiotomy, by reason of its great dangers, was then not even taken into account.

Thus came into use the artificial induction of premature labour by Thomas Denman (1788) and craniotomy by William Osborn (1783). These eminent men had great confidence in the natural power of labour, a view strongly held to-day by all physicians.

Owing to Sir James Young Simpson, to whom we are indebted for the introduction of chloroform (1847), the long forceps and the cranioclast, turning in contracted pelvis was rehabilitated. This

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idea was based upon the assumption that the aftercoming head passes the pelvis more easily than the forecoming head, contrary to the views of former physicians.

As the most distinguished exponent of the science of contracted pelvis immediately after Smellie, George Stein the younger, must be named. On the principles enumerated by these men, in conjunction with Michaëlis and Litzman, our knowledge of labour in contracted pelvis has its foundation to the present day. The views held until recently regarding labour in contracted pelvis are in the main to be referred to the work of Smellie, Stein the younger, Michaëlis, and Litzman. Their views are reproduced to-day in all text-books.

Against these principles, firmly established for many decades and seemingly immutable, voices have been raised within recent times, maintaining that asepsis, which has made rapid strides, must be made use of more and more, in order to replace the old obstetrical by the so-called modern surgical operations, such as Cæsarean section and widening of the pelvis, and thus gradually exercise greater regard to the preservation of the life of the child, which, hitherto, was only taken into secondary consideration.

This period seems to have begun more than twenty years ago with Kehrer and Sängner's improved method of uterine suture. But it was premature to substitute Cæsarean section, which was then and is even now regarded as a most dangerous operation, for a method which allowed labour to take place through the natural passages. The reintroduction of widening of the pelvis, however, by the lateral incision, has raised this question anew, which seems this time to be in a fair way of meeting with general acceptance. It appears to me, however, that even to-day the time has not arrived completely to abolish in contracted pelvis the so-called prophylactic operations, such as artificial induction of premature labour, turning, craniotomy, and application of forceps above the brim, and to displace them by Cæsarean section and widening of the pelvis—operations which preserve the life of the child, although obstetricians of extreme views insist upon them at present. But all these questions have, no doubt, come within the province of practical discussion. And we are looking forward with joy to the time when it will be possible for us to discard all the interferences which jeopardise the life of the child, as we are living in an age which might be truly called the epoch of the child.

The operations used in contracted pelvis are divided into three main groups. To the first group belong indicated measures, to the second prophylactic, and to the third the so-called surgical operations.

To the first-named group belong all those measures which are indicated, not so much by contraction of the pelvis as by other anomalies of labour, anomalies which are mostly the result of con-

tracted pelvis, but for the removal of which operative measures are absolutely necessary. These measures would be indicated apart from the complication of contracted pelvis. Among these operations must be named the application of forceps with the head in the pelvis, turning from a transverse presentation, the extraction by the breech, craniotomy on the dead child, and decapitation.

To the prophylactic operations belong artificial interruption of pregnancy (abortion or premature labour) and the so-called prophylactic version. The application of forceps above the brim is considered by many to belong to this group.

To the so-called surgical operations belong all those in which the integrity of the mother's tissues is sacrificed in favour of the child, either by widening the pelvic space (symphysiotomy or hebotomy), or, discarding the natural passages, by the formation of an artificial channel, whereby the child is extracted through the abdominal parietes and uterine wall (Cæsarean section).

Before we enter more fully upon the indications for the above-mentioned operations, we must discuss the question, which is very important in relation to treatment, namely, how far we can count in cases of contracted pelvis upon spontaneous birth. This question has stood in the forefront of the discussion since Smellie's time, and has only been obscured from time to time by an overgrowth of operative methods which hindered the observation of the natural process of birth. With these operations, on the one hand the interests of the mother received too much consideration (abortion); on the other hand the interest of the child became more manifest (artificial induction of premature labour and prophylactic version)—operations which necessarily interfere with the observation of the natural course of labour.

Nevertheless, spontaneous birth affords by far the best solution of the many complicated problems of contracted pelvis. The objection might naturally be made that spontaneous birth is not always possible. This is, unfortunately, quite correct. But spontaneous birth is more frequently possible than it appears from our statistics. By premature interference with its natural course, many cases of labour are directed into a wrong course and result in great injury to both mother and child. There is no doubt that if these principles, admitted in the present day, were universally and steadily observed, the number of spontaneous births in contracted pelvis would steadily increase. At my clinic about 80 per cent. of the births with narrow pelvis actually occur spontaneously, only full-term births being taken into account.

Now, the question forces itself upon us, does not this expectant treatment cause injury both to the mother and child—to the former on account of long duration of labour causing contusions to the soft parts, to the latter also from undue compression during birth? These consequences, however, do not occur. Of all the possible methods of

treatment of labour in contracted pelvis, the expectant treatment gives by far the best results for the mother as regards both mortality and morbidity. And I would mention here, that we consider the puerperium disturbed if the temperature has once risen to 38°C. (100.4°F.). Regarding the child we have also obtained the best results from spontaneous birth in preference to all other methods of treatment, with the exception of Cæsarean section.

We now come to the so-called indicated operations.

Regarding results for mother and child obtained in cases of contracted pelvis by application of forceps when the head is in the pelvis, turning in cross presentations, craniotomy on the dead child, and decapitation, I would like to refer you to the table* which I show you here on the wall. One might be inclined to accept these figures without comment, as these were treated according to the prescribed and universally accepted rules, without there being any chance of deviation therefrom. Still, the question is justified, whether in all these cases a better result both for mother and child could not have been obtained by timely expert aid. In all the cases of turning the question is justified, whether another method of treatment could not have been adopted which would have been more advantageous to the child, thereby reducing the high mortality of the children. In a third of the cases where turning was resorted to, Cæsarean section or hebotomy carried out at the proper time might have saved these and probably other children. The same applies to breech presentation. In breech presentation, extraction need not always be adopted; a surgical operation may here, on account of the high degree of pelvic contraction, be quite as strongly indicated as it is in a cranial presentation. But these methods of dealing with such cases are partly of the past; nowadays an operation would certainly be considered.

Particularly must it be said regarding craniotomy on the dead child and decapitation that these operations have always been regarded as evidence of faulty midwifery. All these cases were admitted too late. Help was no longer possible for the child, and the mothers were, as the high mortality and morbidity show, frequently infected outside the institution. All these cases might have turned out differently if, from the beginning, a proper modern method of treatment had been adopted. I shall refer more fully to this point later on.

If we now turn to the more important group of prophylactic operations, the induction of artificial abortion must be put to the foreground. This operation was introduced by William Cooper in 1771, in order to avoid Cæsarean section where it was absolutely indicated. Cohnstein in 1874 could collect only ten cases, in all the literature, in which it was carried out in extreme contraction of the

* See page 322.

pelvis. To-day this operation has lost its justification on account of the safety of Cæsarean section. For this indication I have never operated.

On the contrary, the *induction of artificial premature labour* must be considered a justifiable and thoroughly established operation in contracted pelvis. It must be considered, along with prophylactic turning, in the forefront, as a method in favour of the child, in order to avoid craniotomy at the normal term.

The indication given for induction of artificial premature labour is a conjugate between $7\frac{1}{2}$ and $8\frac{1}{2}$ cm. in generally contracted pelvis, and between 8 and 9 cm. in flat pelvis. But when one can count on spontaneous birth in a conjugate of 8 cm., and, even, of $7\frac{1}{2}$ cm., the indication for induction of artificial premature labour falls to the ground on this score.

Nor is artificial induction of premature labour the easy method which some authors consider it to be. If only the operation in its narrowest sense be considered, such as the introduction of a bougie, artificial rupture of the membranes, or the plugging of the cervix, then certainly, would the operation be a simple one. In the further progress of the case, however, other and more serious operations will have to be considered, which one cannot say would have been unavoidable had one waited for the normal termination of labour.

All cases of premature labour do not terminate spontaneously. One does not get a clear picture of the significance of artificial induction of premature labour if only the cases are counted in which spontaneous birth occurs. The high mortality of the children has rightly matured the question, whether one is justified in regarding the operation of artificial induction of premature labour, as an operation carried out solely in the interest of the child. The results of births in the same woman, both mature and premature, were brought forward as an argument in favour of this operation. It was Dohrn who first put this view forward. But many of the births enumerated belonged to a former period of time and were not conducted under clinical treatment. Circumstances may have occurred which might have easily operated unfavourably to the children.

The following observation appears more profitable:—If we take from our total number of cases of contracted pelvis those which, according to general opinion, appeared particularly adapted for the artificial induction of premature labour, for example, multiparæ with a conjugate from $7\frac{1}{2}$ to $8\frac{1}{2}$ cm., and if we likewise eliminate artificial induction of premature labour from the methods of treatment, we find that the very cases in which artificial induction of premature labour has been discarded have had a more favourable result for both mother and child.

If, in opposition to some authorities, we are not inclined at the present moment to abolish the induction of premature labour from

our list of operations in contracted pelvis, we would, at least, still further limit that operation to cases of multiparæ who are known to have given birth to large children with well-developed heads, children which, in spite of their prematurity, have more resistance against the bad influences after the birth than weak and badly-developed, though mature, children. Such children, however, can only be regarded as premature in respect to the duration of their intra-uterine life, and not in respect to the degree of their development. From a social point of view, it cannot be our task to put into this world premature and weakly children. In the struggle for existence, we require strong and well-developed individuals.

Prophylactic turning as regards my clinic must be looked upon as a rare operation.

If we would estimate the value of prophylactic turning in contracted pelvis, we must, as we have done in discussing premature labour, take into consideration the total results first inclusive, then exclusive of prophylactic turning; more especially must we do this in that category of cases in which one expects from prophylactic turning the best result, namely, multiparæ with flat pelvis and a conjugate between $8\frac{1}{2}$ and $9\frac{1}{2}$ cm. The foregoing comparison, however, shows that the total result of prophylactic turning is unfavourable, and especially in those cases which are most suited for that operation, contrary to all reasonable expectation.

Very instructive, finally, is the comparison between spontaneous birth and prophylactic turning in respect of their results in the same categories of contracted pelvis, a comparison in which the circumstances most favourable for prophylactic turning have been assumed. In these cases, likewise, the results of prophylactic turning are unfavourable.

From these statements it is clear that in cases where there is a probability of spontaneous birth, prophylactic turning should be discarded.

The application of forceps above the brim, considered by some authors as belonging to the prophylactic measures, should not be included in this group, since it is used only in an advanced stage of labour with certain indications. Its use is justified as a last attempt to save the child, in cases where craniotomy on the living child might be considered necessary.

If we consider the cases in which, in the absence of urgency regarding the mother, the operation has been performed solely in the interest of the child, we obtain an infantile mortality of 50 per cent.

An operation which can by no means be regarded as free from risk to the mother, and which, when undertaken solely in the interest of the child, results in the saving only of every second child, should surely be replaced by another. Only when the operation is

undertaken in cases of minor degree of contracted pelvis—between $8\frac{1}{2}$ and 10 cm.—cases in which there is urgency on the part of the mother, can the application of forceps be tried, to be immediately replaced by craniotomy if any difficulty be met with.

In connection with the operation of prophylactic turning and the application of forceps above the brim, mention also should be made of craniotomy on the living child. This operation should, according to the view of some obstetricians, *e.g.*, Pinard, be entirely discarded. We cannot, however, altogether dispense with it to-day, as we regard it as an operation of necessity in cases where we find it impossible to carry out any of the alternative operations. In the future Cæsarean section or hebotomy will take its place. To-day it is still indispensable in cases which reach expert aid too late, or in advanced stages of labour, often febrile from infection, where Cæsarean section or hebotomy is contra-indicated, and in which, on account of the head being high above the brim, forceps cannot be applied, or on account of high degree of stretching of the lower segment of the uterus, turning cannot be performed although the completion of labour is urgent.

It is, therefore, in the true sense of the word, an operation of necessity.

Craniotomy on the living child is one of the operations which will in the future be entirely eliminated from the list of obstetrical operations. We shall see at the end when and under what circumstances we may expect this golden age in obstetrics. In the meantime this operation should be limited as much as possible.

When we finally enter into the discussion of the so-called surgical operations in contracted pelvis, Cæsarean section, where relatively indicated, might be put in the first place.

The morbidity during the puerperal stage amounted to 17·2 per cent., the mortality to 3·4 per cent.

These results should show a material improvement in the near future by the improved method in the protection of the wound, as it is customary in laparotomy at my clinic (rubber gloves, mouth mask, and painting the abdominal walls with iodine).

The method of performing Cæsarean section at my clinic is by means of the usual longitudinal section of the uterus. The transverse section is only used in cases where there is considerable stretching of the lower segment of the uterus. As sutures for the uterine wound, silk is used in two layers.

The latest and most recent of obstetrical operations in contracted pelvis is that of hebotomy. We prefer it to symphysiotomy, on account of its better after-results. It is indicated in a contracted pelvis of $7\frac{1}{2}$ to $8\frac{1}{2}$ cm. conjugata vera, when there is no infection, and the mother does not absolutely object to the operation.

For the operation of hebosteotomy the same stringent indications are not required as for Cæsarean section.

Patients who have previously been examined may undergo the operation of hebosteotomy, provided they show no signs of infection at the time of the operation, while for Cæsarean section absolute asepsis is a *sine qua non*. I would not like to go the length of some surgeons, who do not see in manifest infection a contra-indication to hebosteotomy.

All 23 cases (since compiling these statistics 30 cases) were successful. In 47·8 per cent. of the cases there was, however, some fever during the puerperium, due to the not infrequent injury to the soft parts. Only one of the children died (4·3 per cent. infantile mortality).

Accordingly, it is essential that better results should in the near future be obtained in hebosteotomy with respect to its high morbidity. This improvement will occur if we make it a principle to wait, particularly in primiparæ, for spontaneous birth.

Finally, if I am permitted to review the experience hitherto gained regarding the treatment of labour in contracted pelvis, and to draw conclusions therefrom for the future, I might express myself as follows:—

The management of labour in contracted pelvis will shape itself in the future in the following simple manner, provided it is carried out from the very commencement in a skilful manner and in an institution under strict asepsis. In cases with a conjugate above 8 cm. there is a possibility of spontaneous birth, and therefore expectant treatment is to be adopted. In cases under 8 cm. Cæsarean section is to be kept in view. In cases bordering on the above, that is a conjugate of $8\frac{1}{2}$ to $7\frac{1}{2}$ cm. hebosteotomy is to be considered. This operation, in a conjugate of 8 to $8\frac{1}{2}$ cm., would be an alternative operation to spontaneous birth; in a conjugate of $7\frac{1}{2}$ to $8\frac{1}{2}$ cm., an alternative to Cæsarean section. The choice would be determined by the size and hardness of head, the strength of labour pains, the voluntary efforts and general condition of the patient. This method of treatment should be looked upon in the future as typical.

All other methods hitherto used in the treatment of labour in contracted pelvis should be looked upon as atypical. They are not to be considered as methods which were brought into use on account of the difficulty in labour created by contracted pelvis, but as entirely foreign to the subject, and they should not be capable of influencing the typical operations.

Craniotomy on the dead child, therefore, may be indicated in a conjugate under $9\frac{1}{2}$ cm. The death of the child justifies in this case the adoption of atypical method of treatment. Craniotomy on the living child may become necessary if the mother is in a state of infection or refuses to undergo any of the typical operations. Arti-

ficial induction of premature labour may also have to be performed in cases in which the mother is suffering from illness and Cæsarean section or hebosteotomy at the normal term would be too dangerous, or where it is positively known that the children are abnormally large, or the mother absolutely refuses an operation. The application of forceps above the brim and prophylactic turning should, if possible, be entirely removed from the list of methods of treatment in contracted pelvis.

The application of forceps above the brim might exceptionally be tried before craniotomy on the living child is resorted to, and it will probably be possible occasionally to save a child.

Before craniotomy on the living child is undertaken prophylactic turning may be justified in certain degrees of contraction in a simply flat pelvis, when Cæsarean section or hebosteotomy, on account of illness of the mother, is out of the question, and a trial with the forceps affords little hope of success on account of the high position and mobility of the head.

The two last mentioned operations (forceps above the brim and prophylactic turning) will find their indication in such atypical cases as a last attempt to save the life of the child before craniotomy is resorted to—forceps when the head is fixed, turning when it is movable.

That the so-called indicated operations have at times to give place to surgical operations, as shown by our discussion, I have already mentioned.

In a conjugate under $6\frac{1}{2}$ cm., Cæsarean section is absolutely indicated: if the case be aseptic, with suture of the uterus; if septic, with total extirpation or supravaginal hysterectomy. Even the most recent investigation into the management of labour in contracted pelvis will not alter this fact, and I therefore do not enter further into the question.

On the whole, our aim should be to leave labour in contracted pelvis as long as possible to the natural forces, and failing them, to perform only those operations which will most likely save both mother and child. All other operations should gradually be more and more limited. Until this golden age of the treatment of labour in contracted pelvis appears, there are certain conditions to be fulfilled.

The patient must reach the expert in an absolutely aseptic condition without any obstetrical interference of any kind having been made. The circumstances should be such that every kind of obstetrical operation can be immediately undertaken strictly aseptically; finally, our hands should not be tied from carrying out a certain operation by the refusal of the patient or her relatives.

All these conditions may most certainly be fulfilled, in patients with a high degree of pelvic contraction, who seek admission to an

institution at or before the commencement of labour, especially if they have had difficulty with previous births. In this way only can initial asepsis be assured, and all those inopportune attempts on the part of the midwife and practitioner be eliminated, which so often lead to failure.

The natural forces will be more effective than when the patient, the relatives, and the midwife influence the doctor in attendance by demanding a rapid delivery of the case. If an operation becomes necessary, everything is at hand and no time is lost in taking the patient to an institution, where, as usual, after a lengthy consultation, one surgical operation is put aside in favour of another, which certainly could have been carried out at home, but which is only in the interest of the mother and to the detriment of the child. Thus I come to the last point, namely, the question of refusal on the part of the patient to undergo a certain operation.

There is no doubt that we must not perform an operation, whether obstetrical, gynecological, or surgical, without the consent of the patient. Assuming this general consent, the choice of the operation should be left in all its details to the operator. In gynecological operations this has been customary for a long time. Why, then, should the patient have the right to refuse a particular operation which the operator in the case, after mature deliberation, considers to be the best for both mother and child. It is the request for consent to perform a specially named operation which suggests to the patient that this operation is particularly dangerous. Still we perform other dangerous operations without the special consent of the patient. Application of forceps above the brim and prophylactic turning have also their dangers. In these operations injuries also occur, such as lacerations and wounds, to which the straight aseptic incision is preferable. Still nobody asks the patient if she would allow any of these operations or the destruction of her child by craniotomy. Let us, however, frankly admit that, with regard to surgical operations in contracted pelvis, we still stick to the traditions of the time, when Cæsarean section was a deadly operation, but it is high time we should break with these traditions.

It is certainly quite true that Cæsarean section, and to some extent, also, hebstostomy, are even to-day more dangerous than all the other obstetrical operations in contracted pelvis. If, however, a patient, in whom such an operation may become necessary, would from the very beginning get into a public or private institution, where everything can be carried out strictly aseptically, to await her confinement there, then all these influences which affect Cæsarean section so adversely would disappear. Nowadays patients seek admission to an institution at all times, night and day, often in a badly neglected condition. In the space of half an hour everything is to be made ready for Cæsarean section, the abdominal walls are to

be disinfected, an anæsthetic to be administered, although the patient may have shortly before partaken of food and drink. That in such circumstances infections and pneumonias occur our statistics show, as do those of other clinics. Upon these statistics, however, we base our opinion regarding the danger of Cæsarean section. These statistics must be collected anew, with the elimination of all the incidents I mentioned above. All the dangers of this operation will then be reduced to a minimum, and everyone of us will be able to undertake with a clear conscience every kind of obstetrical operation. Until then, however, by a careful selection of cases, the percentage of danger should be reduced as low as possible.

I regard as intolerable and a hindrance to all future progress the constantly recurring statement that the country practitioner cannot and should not perform Cæsarean section or hebstostomy, and should, therefore, as formerly perform only the prophylactic operations and high forceps operation. For this reason all obstetrical schools lay great stress to this day upon the teaching of these operations. If the general practitioner, however, would get accustomed to recognize at the right time high degrees of contracted pelvis, *i.e.*, before the onset of labour, and also to assign all these cases early enough to obstetrical institutions, then might progress also be made in the country and in private practice.

Physicians must be taught to think and to make their influence felt upon midwives and on the public generally, and not to stand, as hitherto, inactively awaiting events, and ultimately performing an old-fashioned operation, most frequently forceps and craniotomy, whereby the child is sacrificed. Innumerable cases in my own experience have proved to me that it is possible to instruct physicians in the way I have mentioned, and not permit them to adopt a fatalist attitude towards events.

The level of education of midwives should be raised *pari passu* with that of the physicians.

We gain nothing by the statement that the physician is usually called too late. We must strive to change all this, and it will be changed if we try our utmost in that direction. Obstetrical schools in this respect should take the lead, and not, as it often happens, completely resign themselves to fate. General practitioners must endeavour to bring the level of their knowledge to that of clinical specialists, instead of the clinicians to the level of the general practitioner as it frequently appears to-day.

I am at the end of my long address. It is difficult, however, to shorten such an important chapter of obstetrics. Almost all obstetrical operations must be mentioned and discussed in their past and future bearing upon our subject. If, perhaps, it appears that my proposals go too far, still the higher the aim the more we will attain. Our fate, however, will be to remain somewhat below the

highest standard, for we are human and have to deal with humanity, whose human arrangements and prejudices we have to combat. If I have succeeded in gaining the co-operation of the physicians of Scotland, who have always stood in the forefront of obstetrical science, in reaching this high goal, I would feel that my time and labour have been amply rewarded.*

THE TREATMENT OF CONTRACTED PELVIS AT THE CLINIQUE OF
 PROF. SCHAUTA IN THE YEARS 1892-1906.
 Number of Births—49,397.

	Frequency		Mortality				Morbidity.		
		per cent	Of Mothers.		Of Children.			p. cent	
				per cent		per cent			
Indicated Operations.	Spontaneous Births...	4,116	77·8	4	0·09	91	2·2	169	4·1
	Forceps with head in pelvis ...	207	3·9	—	—	24	11·6	25	12·0
	Turning in transverse presentation, &c....	353	6·6	2	0·5	101	28·6	32	9·0
	Extraction in breech presentation ..	30	0·5	1	3·3	12	40·0	2	6·6
	Craniotomy on the dead child ...	82	1·5	5	6·0	82	100·	16	19·5
	Decapitation... ..	9	0·16	3	33·3	9	100·	4	44·4
Prophylactic Operations.	Artificial premature labour	34	0·6	1	2·9	16	47·0	2	5·8
	Prophylactic turning	95	1·7	1	1·05	20	21·0	11	11·5
	Forceps above the brim	147	2·7	2	1·3	57	38·7	12	8·1
	Craniotomy on the living child ...	76	1·4	1	1·3	76	100·	6	7·8
Surgical Operations.	Cæsarean section, where relatively indicated	116	2·1	4	3·4	2	1·7	20	17·2
	Widening of pelvis	23	2·0†	—	—	1	4·3	11	47·8
Total		5,288	10·7	24	0·45	491	9·28	310	5·86

* I did not consider it necessary to burden my address with too many figures. I append at the end of the table, and to those who are interested in the source of these figures I refer them to the book which appeared regarding my clinic (Dr. O. Bürger, *Treatment of Labour in Contracted Pelvis*, Vienna, 1907).

† Refers only to the time when hebosteotomy came into use.