

Obstetric forceps guidelines

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The four century old instrument has been put to prime use, good use, abuse and of late, restricted use. The predominant reason has been the safety and extended usage of vaginal by-pass surgery in the form of C-section. Abdominal surgical delivery has been technically perfected and is performed under near total vision while forceps operations continue to remain somewhat blind. Greater effort, prolonged tuition and slowly developed experience are required for the safe use of the forceps as compared to the C-section. The medico-legal climate is feared by the obstetricians as hostile, and the monetary reward for the forceps operation peculiarly remains dismally low.

The diminished true trials of labour and the extensive use of C-section necessarily greatly reduces the number of parturients in the second stage of labour. The modern question now is the appropriate response to the problems of the mother, foetus or both, in the second stage of labour. There are choices and or alternatives, singly or combined, in the form of oxytocic stimulation, episiotomy, ventouse, forceps and C-section. The second-stage C-section is practically, technically a difficult operation. The seriousness of the anaesthesiological and surgical undertaking should be recognised. The paramount importance of the C-section has also unfortunately diminished the enthusiasm for scientifically updating the instrument design for current clinical situations and times. However, in this century, the innovative designs of Kielland, Barton, Piper, Moolgaoker, Leff, Laufe, Hay and some others have been specially useful. The credit for introducing the principle of parallelism must go to WB Shute of Ottawa.

The 'wait and watch' policy followers, who undertake full trials of labour, would require forceps in the second stage. Pursuants of active management would also obviously require forceps use. The protagonists of painless labour involving epidural anaesthesia frequently have to

use the instrument. Attention is also drawn to its correct and advantageous employment at the paradoxically indicated different uses in C-sections. The extra-ordinary use for relief of shoulder dystocia has been documented and audiovisually demonstrated by WB Shute of Ottawa. Good antenatal care adds to the weight and size of the baby. The maternal pelvis requires three generations of good health and care to become capacious. A relative cephalo-pelvic disproportion at an incremental level is foreseen, while increased incidence of shoulder dystocia is a forecast.

A scientific review of the indications of C-section or a popular backlash against it will re-establish the role of judicious forceps use. Skills in C-section and instrumental vaginal delivery will provide total cover for the safety of the mother and baby, it is confidently predicted that forceps delivery will continue to be reviewed and modified for better use in the twenty-first century.

In 1989 and again in 1991, the American College (ACOG) thought it necessary and fit to issue guidelines for forceps operations. These are interesting and reproduced below.

Type of procedure	Classification
Outlet forceps	The fetal head is at the perineum. <ol style="list-style-type: none">1. Scalp is visible at the introitus without separating the labia.2. Fetal skull has reached the pelvic floor.3. Sagittal suture is in the antero-posterior diameter or right or left occiito anterior or posterior position.4. Rotation does not exceed

Low forceps	<p>45°.</p> <p>The leading bony point of the fetal skull is at >+2*, but not on pelvic floor.</p> <ol style="list-style-type: none"> 1. Rotation <45° (left or right occipito anterior to occipito anterior or left or right occipito posterior to occipito posterior) 2. Rotation > 45° 	<p>tween the leading body portion of the fetal skull and plane of maternal ischial spines.</p> <p>Some observations on this opinion are</p> <ol style="list-style-type: none"> 1. The centimeter classification is of uncertain utility. No method to elicit it is suggested. Fetal head, scalp, skull, leading bony point and biparietal diameter are distinct entities Their position is confounded by caput, moulding and asynclitism. 2. The pelvic and perineal floors are distinct structures whose variation is dependent on various factors. 3. The term 'outlet' is loosely used for different structures : soft tissues (perineum, vulva), the bony pelvis as well as instrument and operation types. 4. The issue of rotational delivery is linked to increased feto-maternal risk and operative difficulty. The need to wander blade to achieve cephalic grip is integral in rotations. This requires skill and is not necessarily associated with increased adverse perinatal outcome.
Midforceps	<p>Station < +2 but the head is engaged, Under very unusual circumstances, such as the sudden onset of severe fetal or maternal compromise, application of forceps above +2 may be attempted while simultaneously initiating preparations for cesarean delivery in the event that forceps manoeuvre is unsuccessful. Under no circumstances, however, should forceps be applied to an unengaged presenting part or when the cervix is not fully dilated.</p>	<p>Indications</p> <p>The standard indications are fetal, maternal or combined. Fetal distress includes the non-specific descriptors 'presumed fetal jeopardy' or 'non-assuring FHR patterns'. Full documentation in case record is necessary.</p> <p>Prolonged second stage or indicated shortening are the main maternal indications. In nulliparas, more than two hours without or more than three hours with regional anesthesia is considered prolonged. In multips, the corresponding limits are one and two respectively. These limits afford a reasonable range when crossed, careful scrutiny is warranted with frequent but not mandatory operative delivery.</p> <p>Prophylactic elective use is an established concept. However, it cannot be associated with trial, failed or mori-</p>
Required conditions	<ol style="list-style-type: none"> 1. An experienced doctor performing or supervising the procedure 2. Assessment of maternal - fetal size relationship. 3. Adequate anesthesia 4. Willingness to abandon the attempt if forceps procedure does not proceed easily. 	
High forceps	<p>Not included.</p>	

* Station is defined as distance in centimeters be-

bund forceps. It is prudent to undertake the rotational, not so low and mid forceps as trials, while the latter is only for experts.

Informed consent and detailed documentation is mandatory.

Anaesthesia

Protagonists of painless labour, as also those of active management, will require forceps at outlet. Extensive local infiltration with vocal support will suffice for most outlet operations. Pudendal block may be employed for low forceps. General anaesthesia is to be avoided to prevent Mendelson's syndrome, fetal depression and to preserve patient's bearing down ability. It may rarely be employed in midforceps.

Episiotomy

A generous and deep, prior episiotomy is elective. This tests the anaesthesia and may do away with the need for the forceps. The incision should be orientational. A left-sided one for right positions and right one for left positions is appropriate as oriented to the fetal head. Delivery from under corrected positions is achieved. This is based on the observation that extensions are usually towards the sphincter, than outwards.

Application

After a phantom operation or ghosting, the blades are applied. It is better to apply the left blade first for left positions and the right for right ones. They do the easier 'short arc', aid rotation, at least splint the head from deflecting in the wrong direction and provide an orientation for the wandering second blade.

Clinical checks for correct application

1. Sagittal suture lies midway between shanks
2. More than a finger-tip cannot be placed between fenestration and head on either side

3. Post fontanelle is about a finger-breadth from the plane of the shanks

Blades to lie in the mento-vertical diameter. Can be achieved but cannot be checked.

Grip

Bicephalic bimalar is the only correct grip. Blade locking should be easy with least manipulation and no wrenching. Oblique, transverse, posterior positions and asynclitism will require corrective adjustments. The crux of the issue is to see that the vector of force passes through the flexion or pivot point of the head and along the mento-vertical diameter. The vector is directed along the curve of Carus to promote flexion, allow descent and prevent maternal injury.

Compression

Upto 4mm reduction of biparietal is common and apparently safe. This reduction is useful at the plane of least pelvic dimensions and is independent of traction. This fundamental difference between the forceps and ventouse is to be noted. Compression, especially if excessive, is damaging to the foetus. The divergent or parallel instruments (Shute, Laufe, Hay) have merit in their designs.

Traction

Traction is best applied during contraction at the height of bearing down effort. It is important to hold the station gained by not allowing the head to recede in the relaxation phase. Traction by forceps is at the base and usually beyond the obstruction if present (compare with VE). Traction force should be limited to that generated by an average individual with simple flexion of their forearm. Forceps operation is neither a test of strength or will, if it is to remain popular and safe in assisted delivery.

Rotation

Forceps can effect active rotation at the same station, rarely above, independent of traction. Passive rotation with traction is a routine occurrence. This may especially be required even at low stations in roomy or flat pelvis. It is essential therefore for forceps design to incorporate provision for adaptation and correction or asynchronism. Straighter blades will be a requirement for advantage.

Extraction - Verification of application

Forceps delivery is a quicker method so it is chosen for urgent indications. With correct traction in adequate pelvis, prompt gain in station is evident at the height of contraction. Although, speed is essential, 'deliberate gentle slowness' is rewarding along with curved pelvic axis. The direction of pull has to be skilfully changed. Blades are best not removed before the full head is delivered. This will enable verification of 'correct blades'. It is essential to do this at all operations. Sub-optimal or faulty grip will be revealed and the lye in relation to mento-vertical diameter can be checked. This, over many cases, will help to modify or improve individual wandering technique.

Slipping

Incorrect grip causes slipping with risk of injury to the baby and or mother. A correctly applied forceps never slips although it may fail to deliver. This cannot be said of the ventouse which often slips even if correctly applied.

Failure

All operations except the simple ones are considered as trials. If the possibility of failure is seriously considered in advance, preparations for alternatives are simultaneously started, abandonment short of excessive force or injury is more likely accepted by the operator.

Training and experience

Expert tutoring is essential to develop skills for safe use. Experience has to be developed over all the years of residency training. There is no short course. Individual skills further need honing to decide what instruments, procedures, techniques are successful for each practitioner. Detailed documentation, review of series and individual cases is essential.

Medico-legal issues

The climate is hostile in many places and likely to be more so. Allegations of medical malpractice are often driven by maloccurrence regardless of the cause. Usually, most injuries associated with instrumental delivery are not life threatening. Long term outcome is more related to pregnancy antecedents than delivery events. Detailed records, careful clinical work, proper and adequate kind communication with parents will, by and large, provide protection to practitioners. Unfortunate lawsuits are inevitable in rare cases.

Conclusions

Renewed interest, maximal exploitation of the C-section, new scientific studies and biomedical engineering advances will reestablish the rightful place of the obstetric forceps. Continued use of this classic art into the 21st century is confidently predicted.