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REVIEW ARTICLE

INSTRUMENTAL ASSISTANCE OF DELIVERY

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ABSTRACT

The instrumental assistance of a second period of delivery is one of the more complex issues to be analyzed into the obstetrics practice because there are multiple factors related.Historically there were physicians for and against instrumental assistance of delivery. We can solve a complicated situation by the rigth use of forceps or vacuum into the skilled hands as we can produce maternal and neonatal morbidity with unwise use. Perhaps, the most important fact is that instrumental delivery constitute an valuable option in the final target of decrease the rate of cesarean section. In this article, I analyze several problems associated to instrumental delivery. Fisrt the subject of the training problem is argued over real numbers, and second, also over real numbers is analyzed the problems related with the technique, indications, outcomes and finally complications of the use of instruments to get a vaginal delivery.

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INTRODUCTION

The instrumental assistance of a second period of delivery is one of the more complex issues to be analyzed into the obstetrics practice because there are multiple factors related with:

1- The indication of the use of instruments.
2- The technique and instruments implemented.
3- The perinatal outcomes.
4- The maternal and neonatal complications in the short, middle and long time.

Historically there were physicians for and against instrumental assistance of delivery. We can solve a complicated situation by the rigth use of forceps or vacuum into the skilled hands as we can produce maternal and neonatal morbidity with unwise use. Perhaps, the most important fact is that instrumental delivery constitute an valuable option in the final target of decrease the rate of cesarean section (CS). To reach this target, there are two basic strategies: to increase the vaginal birth after CS (VBACS) that in itself pull up the use of instruments and to avoid the increase of primary CS, wich increase the use of instruments too. Always is good to act with a predeterminated strategie instead to improv. Therefore, those who claim for the urgent need to decrease the CS rate, have to be prepared to accept the increase of the use of instruments (Sachs *et al*., 1999). This involve so much the public opinion, the specialists and even the justice, specially the proficients, who give opinión into the environment and conditions very different to the pressure under wich the obstetrician have to work, in a delivery room and solving an emergency, alone, without the library to consult jurisprudence.

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Background

At the same time that an increment in the rate of CS was observed, the opposite happen with instrumental delivery. Data from the National Hospital Discharge Survey from USA show an increase of CS of 48% and a decrease of the forceps use of 43% (Hankins and Rowe, 2000).

We can see a slow but sustained increase of the CS compared with a stable rate of forceps application. In the next table, we can see the sustained increase of CS and a decreased use of forceps at Maternidad Sardá, a public maternity in Buenos Aires, Argentina.

A mild increase of CS is observed with a decrease in the fórceps use and very few VE applications at Maternidad Sardá, Argentina (Almada, Rubén *et al*., 2014).

The training problem

The special manouvers to apply instruments to delivery the fetus require :

Instrumental delivery rate (1994)

Institution	Forceps (%)	Vacuum (%)	Total (%)
Wilford Hall	20.4	0.3	20.7
University of texas	16.3	0.3	16.6
Baylor	5.1	2.6	7.7
University of Miami	2.1	3.5	5.6
University of S. California	2.6	2.9	5.5
University of Alabama	7.0	6.2	13.2
Medical University S. Carolina	4.9	4.5	9.4
Medical College of Virginia	8.3	1.7	10.0
Ohio State	4.0	4.0	8.0
Maternidad Sardá (Argentina)	5.8		5.8
Hospital Alemán (Argentina)	2.17	5.25	7.42

Rate of CS and fórceps application in Maternidad Sardá (Buenos Aires, Argentina)

Year	Forceps (%)	CS (%)	Total deliveries
1993	4.9	17.8	6.932
1994	5.8	16.3	7.399
1995	4.8	18.4	6.734
1996	3.4	20.0	7.196
1997	4.4	20.3	6.792
1998	4.7	21.1	5.944
1999 (partial)	3.2	21.1	2.995

forceps, the opportunity for a resident is 5 or 6 cases during all residence. Something similar happen with the posterior varieties. At Maternidad Sardá in Buenos Aires, Argentina, during 1998 were assisted 5.994 deliveries, with a rate of 4.7% of fórceps (about 270 applications) (Illia *et al*., 1998). Taken in account that this applications were performed by the 12 residents in their second and third year of residence, it allowed 22 applications by resident. Sustaining this average of applications during their second and third year of residence, every resident end his or her residence having done 44 applications each one. If we consider that during their last year of residence, they will do some additional applications, they will end the residence having done about 50 applications. In a private Clinics, this percentage is reduced at less than a half of applications, so, the residents need more training before to start to exert the speciality alone. This is one of the reasons by wich in some places we can see an increased rate of CS.

Indications of instrumental delivery

From a general point of view, instrumental delivery is indicated when is necessary to abbreviate the last period of labor. Maternal indications: heart, hypertensive and ophthalmologic diseases. Fetal indications: non reassuring fetal heart rate. Ovular indications: abruptio placenta, cord prolapse. Also is indicated when we are in front a prolonged expulsive period and the conditions to apply instruments are present. Besides, there are special indications such as retention of the head in breech delivery. Another indications are when the mother is worn out, when she lost the control of the situation, when the variety of cephalic presentation is sacral in nuliparas or when the epidural analgesia is so deep that it does not allow to perceive the push sensation for the mother. The American College of Obstetricians & Gynecologists have defined the indications of instrumental delivery in standard or special (Carmona *et al*., 1995).

Evolution across the time of the way a delivery in a public hospital in Argentina

Years	2008	2008	2009	2009	2010	2010	2011	2011	2012	2012
	N	%	N	%	N	%	N	%	N	%
CS	1.675	24.53	1.771	24.17	1.731	23.26	1.652	24.95	1.691	26.18
Spontaneous	4.992	73.11	5.333	72.8	5.563	74.74	4.891	73.86	4.655	72.08
Forceps	149	2.18	220	3	147	1.98	79	1.19	111	1.72
Vacuum/Others	12	0.18	2	0.03	2	0.03	0	0	1	0.02
Total	6.828	100	7.326	100	7.443	100	6.622	100	6.458	100

- A deep knowledge of pelvic maternal anatomy.
- A deep knowledge of the dinamic process about the relationship between fetus and maternal pelvis, in every level of the maternal pelvis and each time of different mechanisms of labor in cephalic and breech presentation.
- Respect to instruments, is required a wide domain of the technical aspects of at least two kind of forceps (one with tractor and other without tractor) besides the knowledge enough to vacuum application, the indications, the fetal conditions for the application and finally, the contraindications of each instrument.

How many opportunities have a resident to be trained in this manouvers?

The answer is not simple. First, it depends where he or she is doing the residence. In our country, the possibility to apply forceps is superior in public hospitals than in private ones. In this hospitals, the patients are assisted by their physicians, while in a public hospital is assisted by the emergency department (ED). So, under supervision, in ED the residents can be trained easily than in a private clinics. For example, in a Hospital with 1.500 annual deliveries with one resident per year of residence, how many opportunities have the residents to learn this techniques? In Hospitals where still use the middle forceps (MF), it has been communicated that the rate is about 4%. So, it would be assisted 63 cases per year, it means 16 MF for every resident along the four years of residence. Jain *et al* observed that the lack of progression of labor in cephalic presentation at transverse variety at their Hospital between 1970 and 1990 was 0.79 to 2.93% (Jain *et al*., 1993). If we consider that a half of cases would be candidates to apply

Standard indications

1- Prolonged expulsive period (three or more hours whitout epidural analgesia).
2- Non reassuring fetal heart rate.
3- The need to abbreviate the expulsive period for maternal or fetal benefit.
4- When there is a need to avoid push in case of: heart, lung, ophthalmological and neurological diseases.
5- The need to reinforce the push in certain neuromuscular diseases, when the mother is worn out, lack of cooperation, to much analgesia.

Special indications

1- Prolongation of the expulsive period because of asinclitism.
2- Cord prolapse or placental abruptio.

3- Non obstetrical indications such as strange corps in vagina or rectum.

Gei and Belfort (1999) consider that under certain circumstances the instrumental delivery should be avoided. This cases are: when the mother refuse a vaginal delivery, when the fetus is affected by a bone disease or thrombocytopenia or when the conditions to apply instruments are not accomplished.

Forceps

The success or failure of the procedure are conditioned for two situations:

1-the high of the presentation
2-the rotation neccesary to the fetal extraction
According the high of the presentation, the forceps are classified in:

- Low forceps: when are applied in III or IV Hodge plane.
- Middle forceps: when are applied in II Hodge plane.
- High forceps: there is no indication at the present time for this forceps.

Hagadorn-Freathy *et al* in a prospective study analyzed 357 deliveries by forceps according this classification (Hagadorn-Freathy *et al*., 1991). So, 281 cases classified as middle forceps (MF) were reclassified according the new classification:

1- MF in 63 cases
2- Low forceps (LF) with rotation more of 45° in 27 cases
3- LF with rotation lower than 45° in 151 cases
4- Extraction forceps (EF) in 40 cases

The risk of perineal tear of third or fourth degree and vaginal tear was related with applications at station 0 and +1 and rotations of more than 45°.

The acidemia and fetal injuries were related with the difficulty of application. The fetal injuries were:

1- VII nerve injurie in 10 cases
2- Brachial plexe injurie in 3 cases
3- Clavicular fracture in 5 cases

All this complications were solved whitout residual sequelaes. The rate of facial palsy with MF was 9.5%. So, the LF and EF could be used to abbreviate the expulsive period without injuries to the mother neither fetus. According this information, the security and efficiency of EF and LF with a rotation lower than 45° are confirmed. The need of rotation of more than 45° are not frequent. In the Hagadorn-Freathy study, only 15% of LF required this rotations (Hagadorn-Freathy *et al*., 1991). Hankins and Rowe (1999) suggest that the applications with need of rotation of more than 45° should be abandoned because:

- the scarce number of cases does not allow right training of residents.
- the decrease number of specialists trained enough to perform the procedure.
- the unacceptability of 1% of skull fracture rate associated to the procedure.

Our group had analyzed the fórceps application in 161 cases, 114 with fórceps Zweifel, 23 with Tarnier and 24 with Simpson (Morondo *et al*., 1998). The applications were without rotation in 38 cases (23.6%), with rotation of at least 45° in 81 cases (50.31%) and rotation of more than 45° in 20 cases (12.42%) because were transverse varieties. The rate of maternal complications was 13.1 and 13% with Zweifel and Tarnier forceps and 4.1% with Simpson forceps. Neither case suffer compromise of rectal mucose nor anal sphincter. The rate of complications in the newborn were 46.4% with Zweifel forceps, 56.5% with Tarnier and 12.5% with Simpson. The VII nerve palsy happened in 3 cases (1.86% of total applications and 5.66% with Zweifel). Our conclusion is that forceps application is a valid resource when there is a need to abbreviate the expulsive period of labor. But it require the accomplishment of indications and conditions that not to be present, become the manouver in dangerous, taking off the benefits produced by their wise use.

The American College of Obstetricians & Gynecologists Classification of fórceps application (1988) (Carmona *et al*., 1995)

Extraction forceps	Low forceps	Middle forceps	High forceps
1-The fetal skull is observed 2-The fetal skull ison the pelvic floor 3-The sagital suture is in the anterior-posterior diameter or is an anterior oblique variety 4-The fetal head is into the perineum 5-No rotation more than 45° needed	1-The fetal skull is lower than +2 station but is not in the pelvic floor 2-Rotation needed equal or lower than 45° 3-Rotation needed more than 45°	1-The fetal skull is above +2 station but the presentation is engaged	1-Not included in the classification

Failed forceps

In 1986, Boyd *et al* analyzed 53 cases in wich ones the operator decided give up the forceps application (Boyd *et al*., 1986). The outcomes were compared with newborns delivered by CS after failed forceps vs newborns delivered by CS because progression failure of labor and with newborns delivered after successful forceps applications. They compared 2760 spontaneous deliveries with 2.353 LF, 1276 MF, 82 CS because failure of progression and 53 CS because failed forceps. They observed that the rates of severe neonatal depression, neonatal encephalopathy and admission to Intensive Care Unit were superior in case of CS, except the rate of fractures or palsies, wich were more frequent in the cases of MF. In our Service, it was weird to apply a forceps and not to get a delivery of the fetus. This cases, probably are related with some mistake in obstetrical evaluation, problems with the skill of the operator or some obstacle not diagnosed.

So, before to apply a forceps is wise to:

- A detailed evaluation of the obstetrical conditions.
- In wich step of labor mechanism is the presentation.

- Be sure about the proportion between fetus and maternal pelvis.
- The choose the right forceps.
- The skill of the operator.

These are the elements that contribute to success or failure of the procedure. During the application, when the operator realize that something does not work as expected, inmediatly he or she must evaluate the convenience to continue or give up the procedure.

Vacuum

The vacuum extractor (VE) is more frequently used in Europe and USA than in our country, even is more frequently used than fórceps (Dell *et al*., 1985). The advantages of their use are (compared with forceps):

- The modern vacuums are automatically desactivated when certain power is reached.
- Less training is necessary tu use it.
- Because it does not increase the diameter of the presentation like forceps, it would not produce the maternal harms than forceps.
- Several studies have compared the outcomes of the vacuum vs forceps. Most of them observe an increase of maternal injuries associated to forceps as well as with vacuum is observed an increase of neonatal injuries (Johanson *et al*., 1999; Johanson and Menon, 1998; Kuit *et al*., 1993).

Williams *et al* evaluated instrumental deliveries with fórceps or vacuum in at random study in 90 patients (Williams *et al*., 1991). The vaginal delivery was gotten with the choosen instrument in 83% with vacuum and 78% with forceps. Among failed forceps 90% were failures in the application and 10% failures in the traction. In 82% of cases of failed forceps, the delivery was gotten by vacuum use. The retinal haemorraghe was more frequent with VE than forceps (38 vs 17%). The marks in the newborn face were more frequent with forceps while the increase in bilirrubina was with VE. Kuit *et al* compared VE with rigid or soft cup (Kuit *et al*., 1993). The soft cup detached once in 12% and twice in 5% of cases compared with 3 y 0% with rigid cup. The procedure failed in 10% with soft cup and 4% with the rigid. The skull scalps and cephalohematomas happened in 27% with rigid cup and 11% with soft one. Taking in account this and other studies (Robertson *et al*., 1990; Hillier and Johanson, 1994), we can conclude than the rigid cup have the advantage to detach lesser times, with a mild increment in the success of the applications, but is associated clearly with more neonatal complications. More recently, Bofill *et al* performed a random study about continuous or intermitent application with VE of rigid cup (Bofill *et al*., 1997). With this VE, the level of pressure does not decrease between the intervals among the tractions, so the fetus does not loose the level reached during the traction. On the other hand, it could mean an increase of skull scalps and cephalohematoma. Finally, the continuous traction method neither accelerated the delivery nor produced less failures during the application. According the study of Teng and Sayre (Teng and Sayre, 1997), the time of the application was the best predictor of neonatal trauma, followed by the duration of the expulsive period and the paramedian application of the cup. The rate of injuries was increased when the applications were done during more than 10 minutes. Another factor that have influence in the complications rates is the presence of asinclitism. In this cases, there is an increase of cephalohematoma.

Sequential use of instruments

It is reasonable to think about the use of both instruments to achieve the fetal extraction. In the case of vertex presentation in transverse variety upper of the spines, there is maternal fetal proportion, but a forceps application should be very difficult. So, it could be possible try to descend the presentation with a VE and finally deliver the fetus by forceps. Ezenagh *et al* reported the maternal and neonatal outcomes in a cohort of patients assisted by sequencial instruments (Ezenagh *et al*., 1999). The authors concluded that with the wise implementation of both instruments to assist deliveries, there is not an increase in neither maternal nor neonatal morbidity.

Studies that compare both instruments

Robertson *et al* did a retrospective analysis of VE or MF and LF applications (Robertson *et al*., 1990). They compared 95 MF and 52 medium VE vs cesarean section with an expulsive period of at least 30´ and similar high of the vertex (n: 290) and 921 LF with 347 low VE vs CS with at least 30´of expulsive period. In all cases in wich ones vaginal delivery was achieved, there were a significative decreased of maternal morbidity, hospital satay and estimated blood loss. In the cases of vaginal assistance with MF or middle VE, there was a significative increment of neonatal resuscitation and base deficit in cord blood gases. In both groups of forceps application, there was a significative increment of newborns with PH less than 7.10 and an increment in base deficit in blood cord. In the study of Bofill *et al*. (1996), the deliveries assisted with VE were faster than with forceps application, were associated with a less rate of episiothomy and third and four degree tears. Our group did a retrospective study of 108 forceps applications and 178 VE with a soft cup. There was a preference to apply VE in middle level of vertex (37.6 vs 11.1%) and the opposite happened in the cases of LF or low VE (62.3 vs 88.8%). We observe dan increase of maternal injuries with forceps vs VE (65.7 vs 26.4%, $p<0.0001$). It was observed a mild increment of fetal injuries associated to VE (51.1 vs 47.1%, $p<0.785$) (unpublished data). As a conclusión, every method seems to have special indications and both have a place in the obstetrical assistance. VE is the prefered method when only descendant traction is neccesary and fórceps is prefered when rotation is needed.

Complications

Associated to forceps use

The forceps application is associated with more pain than spontaneous delivery, so the procedure require an adequate analgesia. For LF a pudendal anaesthesia is enoug. If the indication is an emergency, is preferable a general anaesthesia. However, most of our patients are in labor under epidural analgesia, so we can apply any instrument without problems.
The forceps application is associated with an increase of third and four degree tears. Respect to neonatal complications, those related with PH and base deficit are difficult to be analyzed, because is not easy to know if should be attributed to the procedure itself or to the indication of the procedure. The superficial marks are almost always seen and disappear in 48

to 72 hours. The situation is more complicated when the application is no right and the forceps exert pressure over other facial surfaces. This excesive pressure may produce blisters, tissue nechrosis and more generalized trauma in the case of frontomastoidal application. During a right application, the rotation and traction can produce injurie of facial nerve. Generally this pictures health spontaneously. Besides, there have been reported another injuries associated with the forceps use such as: skull fractures, subgaleal hematomas and intrachraneal hemorrhages. Is important underscore that this injuries have been observed in association with no instrumental deliveries.

Associated to vacuum use

The Food & Drug Administration from USA has advised about to be wise with the VE applications, because it could cause serious and sometimes fatal complications. Specially the neonatologists have to know that a VE was used to check potential complications. The use of VE has increased from 3.5 to 5.9%, so the rate of complications has increased until 5 times. There are mainly two special complications to take in account: Subgaleal hematoma and intracraneal hemorraghe. Subgaleal hematoma could not be perceived by the neonatologists if they have not experience with this newborns and could be fatal. Several years ago, assisting a delivery of a diabetic patient, 36 week´s of gestational age with preterm rupture of membranes, I descended the presentation with a VE and then extracted a fetus by LF. The newborn was vigorous but was delivered with a remarkable edema in his head. Few hours after delivery the newborn did not well with an hypovolemia and shock. The neonetologists reacted too late and there was no other kind of injuries nor skull fracture. Finally the newborn died and the cause was a incorrect management of subgaleal hematoma. So it is very important that the neonatologists react fast and in the right way. It has been published that the fact to have used a VE should be a routine indication of skull X ray to rule out skull fractures.

The Food & Drug recommendations about VE applicatiosn are:

1- Use only when there is a specific indication.
2- Those that use a VE should know the technique and to be informed about the indications, contraindications and precautions.
3- Pay attention to the manufacturer recommendations about the cup, the pressure exerted, the accumulative duration of the applications and the number of attempts of extraction.
4- Do not apply to the device lateral movements, only a firm traction taking in account the direction of the Carus axis.
5- The neonatologists should know that VE was implemented, and should be informed about the specific complications associated with their use.
6- The adverse events and complications associated should be communicated to the Food & Drug Administration according with the Safe Medical Devices Act of 1990 (Public Law 101-629).
7- The trained obstetrician may use both instruments.

Riethmuller *et al* analyzed in 210 cases the maternal and neonatal outcomes of delivery in vertex but posterior variety (Riethmuller *et al*., 1999). The prognosis in this cases is good, but worst than in anterior varieties, specially because of maternal perineal injuries and maternal and neonatal infections. According the authors, the extraction with forceps is criticized and consider that the extraction with VE is the best indicated because the less aggressivity to maternal perineum.

Maternal complications associated to instrumental delivery

According the studies of Sultan *et al* (1996, 1993, 1999, 1996), there is a clear relation among the use of forceps and anal defects, although the VE is involved too. Peschers *et al* did a study to evaluate the possibility to observe the anal sphincters by external ultrasound (Peschers *et al*., 1997). With this technique, the internal sphincter is seen as hypo or anechoic circle while the external sphincter show an hyperechoic circle. Is important to say that is posible to see a sphincter injury in patients without symptoms. In this study, only 12 from 20 patients with anal defects had incontinence symptoms. 12 out 25 patients with incontinence had sphincter defects and the other 13 had symptoms because neurological or intestinal diseases. So, based in the multifactorial causes of anal incontinence, the exoanal ultrasound is an ancillary method to perfomr diagnostic. Another element that may cause anal incontinence is the muscular or neurological stretching in the pelvic floor. Peschers *et al* used perineometry and perianal ultrasound to evaluate the contraction potency of levator annis (Peschers *et al*., 1997). In the inmediat postpartum there was a clear reduction, but 6 to 10 week´s later most of the patients had recovered the average potency. According Sultan, delivery is the main cause of fecal incontinence. This patients present a structural sphincterial injury that involve one or both sphincters. He showed that 35% of primiparas developed a detectable sphincter defect with endoanal ultrasound and this damage persisted 6 month after. It seems that there are changes in the pudendal nerves after vaginal delivery associated with a large fetus and prolonged expulsive period. The instrumental delivery has been associated with fecal incontinence. However, some authors could not establish if there are differences between forceps and VE. Others have found that forceps was associated with more severe perineal injury and occult anal trauma than VE. This studies generated the recommendation from the Royal College of Obstetricians & Gynecologists that the elective instrument is VE. In the case of sphincter rupture, the repair technique with stitches in 8 is questioned because it could cause muscular injury by muscular isquemia producing residual incontinence.It seems that the ideal repair technique would be the overlap technique, it is prefered at the present time with a 75% of success, although now some authors atribute the same amount of success to the termino terminal technique. Some authors have said that CS exert a protector effect over this injuries, but only in the case of scheduled surgery, because the intrapartum CS was also associated to pudendal nerve injury (Landon *et al*., 2004). The episiotomy has a roll in the perineal trauma and sphincter damage production. Recent revisión manuscripts does not give support to their routine use. The only advantage proven is a decrease in parauretral tears, but it does not produce incontinence. We analyzed the use of forceps and VE during instrumental assistance of delivery to abbreviate the expulsive period, evaluate maternal and neonatal complications and perinatal outcomes. It was a retrospective study of deliveries assisted in the Obsterics Service at Hospital Alemán, Buenos Aires, Argentina. Between January 1992 and December 2002 we performed 239 forceps applications and 346 VE. There were analyzed the obstetrical background, the characteristics of labor

during the different periods, the instrumental applications and their complications (maternal and neonatal).

Maternal Complications

Tears	Forceps (n: 220)		VE (N: 343)		OR (CI)
	N	%	N	%	
None	125	56.81	273	75.59	2.96 (2-4.39)
1° degree	17	7.72	21	6.12	1.28 (0.63-2.61)
2° degree	26	11.81	17	4.95	2.57 (1.30-5.09)
3° degree	6	2.72	1	0.29	9.59 (1.14-212)
4° degree	1	0.45	1	0.29	1.56 (0-57.34)
Vaginal	24	10.90	16	4.66	2.50 (1.24-5.08)
Cervical	7	3.18	5	1.45	2.22 (0.62-8.66)
Parauretral	14	6.36	9	2.62	2.52 (1.00-6.44)
Total	220	100	343	100	

As we can see in the table, there were less maternal injuries associated with VE.

Neonatal complications

Injury	Forceps (N: 235)		VE (N: 349)		OR (CI-P)
	N	%	N	%	
None	200	85.10	268	76.79	0.58 (0.37-0.92)
Cephalohematoma	15	6.38	0	0	<0.0001
Edema	0	0	40	11.46	<0.0001
High bilirrubina	20	8.51	41	11.74	0.70 (0.38-1.27)
Total	235	100	349	100	

1- The forceps application showed a tendency to lesser neonatal injury.
2- The VE showed a clear and significative tendency to less frequency of maternal injury.

According to the present evidence, we and others believe that the elective instrument to vaginal delivery assistance is VE, except for situations with rotational requirements (Hans Peter Dietz and Stuart Campbell, 2016).

Conclusion

Both resident training in the use of obstetric forceps and forceps deliveries are experiencing precipitous declines in the United States and other places as was stated at the begining.
Current minimum training requirements are insufficient to ensure competency in this skill as was demonstrated previously. Attempts by experienced teaching faculty to provide residents with experience in a few forceps deliveries are of little value and may do more harm than good. There would seem to be only two viable solutions to this dilemma: 1) abandon attempts to teach forceps and prepare residents for a real world practice setting in which management of second stage labor does not include the availability fórceps delivery; or 2) prioritize the development of high-fidelity simulation models in which fetal head size and attitude and pelvic size and architecture can be continuously varied to allow residents to obtain sufficient experience to know both how and when to proceed with fórceps delivery (Gary *et al*., 2016). Forceps use has been decreasing all overthe developed world, with the greatmajority of vaginal operative deliveriesin continental Europe, Scandinavia, andNorth America now being done by vacuum. In our country, a few hospitals have implemented VE because a lack of training and still continue using forceps as a main instrument. In 1989, Chalmers and Chalmersdeclared that the "obstetric vacuumextractor is the instrument of choice foroperative vaginal delivery." In the UnitedStates and Germany, forceps rates havenow dropped to <1% as well as in Argentina. Encouraging the use of forceps is worrisome, given recent evidence linking this type of operative vaginal delivery with pelvic floor trauma (Gary *et al*., 2016). Forceps use is well established as the major risk factor for both anal sphincter and levator trauma or "avulsion."(Hans Peter Dietz and Stuart Campbell, 2016). Avulsion in particular is not yet generally recognized as a major form of obstetrictrauma due to the fact that it is usually occult. In simple terms, the levator ani is disconnected or peeled off its insertion on the os pubis at crowning and is not easy to be diagnosed clinically. Due to the greater elasticity of the vagina itself, the tear remains invisible behind intact vaginal skin, although it is occasionally exposed by a large lateral vaginal tear. Once peripartum changes have settled down, avulsion is palpable, although the diagnostic gold standard is tomographic ultrasound (Hans Peter Dietz and Stuart Campbell, 2016). It hasrecently become clear that such tears are the missing link between vaginal childbirthand prolapse, especially of the bladder and uterus.In the presence of avulsion, prolapse is much more likely to recur. Our country and others should implement models of training in the use of VE to decrease maternal injuries and leaving the forceps use only for those situations where rotation is required.

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