CROSS SECTIONAL STUDY COMPARING THE CONVENTIONAL METHOD AND MODIFIED MISGAV LADACH METHOD FOR CAESAREAN SECTION IN HOSPITAL KUALA TERENGGANU

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ABBREVIATIONS

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BC	before century
CCT	control cord traction
CPD	cephalopelvic disproportion
eg.	example
Hb	haemoglobin
HKT	Hospital Kuala Terengganu
HUSM	Hospital Universiti Sains Malaysia
no	number
PPH	post partum haemorrhage
RCOG	Royal College of Obstetricians and Gynaecologist
RCT	Randomized Control Trial
UK	United Kingdom
vs	versus

ABSTRACTS

ABSTRAK – BAHASA MALAYSIA

Pengenalan. Pembedahan Caesarean adalah suatu pembedahan yang kerap dilakukan dalam bidang obstetrik. Lebih kurang lima belas peratus kelahiran di Hospital Kuala Terengganu adalah melalui kaedah ini. Seabad yang lalu Pfannensteil telah mencipta insisi pembedahan melintang pada abdomen sebagai alternatif kepada insisi menegak. Joel-Cohen telah memperkenalkan teknik baru yang kemudiannya diubahsuai oleh Dr Michael Stark. Teknik tersebut dikenali sebagai teknik Misgav Ladach. Terdapat banyak kajian kawalan telah dilakukan yang menunjukkan kebaikan kaedah ini.

Walaubagaimanapun beberapa langkah dalam kaedah ini telah menimbulkan persoalan dan masih dibahaskan sehingga sekarang. Ini membawa kepada pengubahsuaian dalam teknik pembedahan Misgav Ladach ini. Beberapa kajian dengan beberapa perubahan yang berbeza telah dilakukan dan menunjukkan keputusan yang memberangsangkan.

Objektif. Tujuan kajian ini adalah untuk mengetahui kelebihan teknik 'ubahsuai Misgav Ladach' sekiranya dibandingkan dengan teknik konvensional semasa melakukan pembedahan Caesarean.

Metodologi. Satu kumpulan pesakit menjalani pembedahan kelahiran dengan mengunakan teknik 'ubahsuai Misgav Ladach' dan satu kumpulan yang lain dibedah dengan menggunakan teknik konvensional. Kedua-dua pembedahan ini dilakukan oleh dua orang pelajar sarjana perubatan yang berlainan.

Ciri-ciri kajian utama. Jangkamasa pembedahan, masa yang diambil untuk kelahiran bayi, jumlah kehilangan darah dan komplikasi yang berlaku dalam setiap teknik.

Keputusan. Jangkamasa pembedahan adalah tidak berbeza untuk kedua-dua teknik di mana masa untuk teknik 'ubahsuai Misgav Ladach' ialah 27.3 minit dan 32.8 minit diambil untuk teknik konvensional (p=0.055). Jumlah kehilangan darah juga tidak berbeza dengan 360ml dan 416ml (p0.065) untuk teknik 'ubahsuai Misgav Ladach' dan teknik kovensional masing-masing. . Tempoh untuk kelahiran bayi juga tidak berbeza secara signifikan di mana teknik ubahsuai Misgav Ladach ialah 2.67 minit dan teknik konvensional ialah 3.11 minit (p=0.07). Jumlah kes yang mempunyai koyakan yang lebih adalah sama dalam kedua-dua teknik iaitu lima kes. Terdapat satu kes pendarahan selepas bersalin (0.3%) dalam kumpulan teknik konvensional manakala tiada kes yang sedemikian rupa dalam kumpulan ubahsuai Misgav Ladach (p=0.605). Kes yang mengalami demam semasa hari kedua selepas bersalin juga tidak signifikan di mana empat kes (2.6%) dan dua kes (2.0%) dalam teknik ubahsuai Misgav Ladach dan konvensional masing-masing.

Kesimpulan. Teknik 'ubahsuai Misgav Ladach' tidak menunjukan kelebihan lain jika dibandingkan dengan teknik konvensional. Tiada perbezaan dalam jangkamasa pembedahan, jumlah kehilangan darah, jangkamasa kelahiran bayi dan komplikasi semasa atau selepas pembedahan.

ABSTRACT – ENGLISH

Introduction. Caesarean section is a common obstetrical operation. About fifteen percent of all deliveries in Hospital Kuala Terengganu were by abdominal route. A century ago, Pfannensteil described a low transverse abdominal incision as an alternative to midline incision. Joel-Cohen introduced a new method of opening the abdomen, which was further modified by Dr. Michael Stark. The new technique was called Misgav Ladach technique. The large controlled studies have demonstrated many advantages of this method. However few steps of this technique had brought controversial issues until present time. This has lead to some modifications of the original method. A few studies with a different modification shown a promising result without arises much debate.

Objective. This study was to compare the effect of modified Misgav Ladach with conventional method on the operating time, blood loss, duration to deliver the baby and complications such as post partum haemorrhage and extended tear in performing caesarean section.

Methodology. One group was operated by modified Misgav Ladach method and the other group by the conventional method. The operations were performed by two different surgeons.

Main outcome measures. Operating time, duration for delivery the baby, amount of blood loss and complications occur in each method.

Results. Operating time was not significantly different between two methods with an average of 27.3 minutes in the modified Misgav Ladach method and 32.8 minutes in the conventional method (p=0.055). The amount of blood loss also was not significantly different with 360ml and 416ml (p=0.065) for modified Misgav Ladach and conventional method respectively. The duration for delivery the baby was not significantly different with modified Misgav Ladach took 2.7 minutes and conventional method took 3.1 minutes (p=0.07). The numbers of case with extended tear were same in both methods (five cases). There was one case of PPH (0.3%) in conventional method and none in modified Misgav Ladach method (p=0.605). The episode of fever on second day of operation also was not significantly different with 4 cases (2.6%) and 3 cases (2.0%) in modified Misgav Ladach method and conventional method respectively.

Conclusion. The modified Misgav Ladach method do not offer any advantages over the conventional method. There were no significant different in operative timing, amount of blood loss, duration for delivery the baby and complications either intra or post operatively.

INTRODUCTION

INTRODUCTION TO THE STATE OF TERENGGANU

Terengganu is situated in the East Coast of Peninsular Malaysia. It is one of the thirteen states within Malaysia. Its border is shared with Kelantan and Pahang. It covers a land of 12,955 square kilometers with a population of 1 052 140 in year 2001.

Terengganu is also known as the "Culture Heaven of Malaysia". Traditionally, the state is a songket producer. A large number of its population is also engaged in fishing industry. The state is also well known for its handicraft, cloth, batik and silverware.

The state capital Kuala Terengganu is located along South China Sea and situated 447 kilometers from the Federal Capital Kuala Lumpur. The state of Terengganu consists of six districts namely Besut, Setiu, Kuala Terengganu, Dungun, Hulu Terengganu and Kemaman.

INTRODUCTION TO HOSPITAL SULTANAH NUR ZAHIRAH, KUALA TERENGGANU

Hospital Kuala Terengganu was built in 1968 and has moved from the old to the new building in 1987. It is located near to the beautiful Batu Buruk beach in the middle of Kuala Terengganu town.

Also known as Hospital Sultanah Nur Zahirah since December 2nd 2006, Hospital Kuala Terengganu is an important tertiary centre for state of Terengganu. It received about 20,000 patients yearly and provides about a thousand beds in all wards. Hospital Sultanah Nur Zahirah has almost all units needed such as Obstetrics and Gynaecology, Medical, Surgical, Orthopaedics, Paediatrics, ENT, Ophtalmology, Radiology, Accident and Emergency, Plastic and Burn Unit and etc.

The hospital consists of two main buildings. All the wards are located in the old building. The Day Care Centre is a new building consists of auditorium, minor operation theater, library and clinics. It started functioning in 2002 to give better services to the patients.

The hospital has a future plan for a new building of Maternity Unit. It will consist of labour ward, antenatal and post natal ward and neonatal intensive care unit. It will be operating in year 2011.

INTRODUCTION TO THE DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY, HOSPITAL SULTANAH NUR ZAHIRAH, KUALA TERENGGANU.

The Department of Obstetrics and Gynaecology continues to be one of the most challenging disciplines of clinical services in Hospital Sultanah Nur Zahirah. One of the agendas in the strategic planning focused on the upgrading aspect of clinical services including monitoring and improving the services in all district hospital in Terengganu.

The Department of Obstetrics and Gynaecology will still be the only referral centre for another two to three years. It receives cases from all district hospital, mainly Hulu Terengganu, Dungun and Setiu. Patient from other district such as Besut and Kemaman are referred to Hospital Universiti Sains Malaysia, Kota Bharu and Hospital Tengku Ampuan Afzan, Kuantan which are nearer compared to Hospital Sultanah Nur Zahirah.

The maternity unit is located on the first floor of the old building. It consists of labour room, antenatal and postnatal ward. The labour room has eight delivery suites, a two bedded pre-eclampsia room (for patients requiring intensive care), a two bedded premature labour room, a two bedded admission room, one operating theater (maternity operation theater) and a neonatal resuscitation room. It is also equipped with an ultrasound machine, dynamaps, eight cardiotocography (CTG) machines, infusion pumps, electrocardiography (ECG) monitoring machines, two resuscitation trolleys and central oxygen supply.

THE CLINIC SCHEDULE

Table 1: The Obstetrics and Gynaecology clinic schedule of Hospital Sultanah Nur Zahirah, Kuala Terengganu.

DAY	MORNING	AFTERNOON
SATURDAY	Antenatal booking	Post graduate presentation
SUNDAY	Gynaecology clinic	Menopause clinic
MONDAY	Antenatal follow-up clinic	Pre-operative discussion
TUESDAY	Gynaecology operation day	Gynaecology clinic
WEDNESDAY	Ultrasound	House officer presentation or audit (alternate week)
THURSDAY	Infertility clinic / Combine clinic	

The total number of delivery for the year 2004 was 13,481. It was an increasing number about 2000 deliveries compared to previous year. The changing trend in breech delivery, especially toward reduction in assisted vaginal delivery, reflects the more widespread of elective caesarean section and use of external cephalic version. The hypertensive disease in pregnancy remain the most common medical disorder in pregnancy contributing to 13% of total delivery. The number of diabetic mother had increased more than two fold from the previous year. The total number of Post Partum Haemorrhage (PPH) remains similar to previous years despite various efforts to reduce it through the Quality Assurance Project (QAP) – Hospital Scientific Approach. The most common cause is still uterine atony. Bronchial asthma remains the most common chronic respiratory disorder in pregnancy. Reverse trend was seen in heart disease group as congenital causes leading the acquired group, although the chronic rheumatic heart disease is still the single most common pathology.

Table 2: Number of patients seen in Obstetrics and Gynaecology Department in 2004.

Year	**2003**	**2004**
Number of admission	13,177	15,201
Number of deliveries	11,153	13,481
Number of live birth	11,155	13,604

Total number of spontaneous vaginal delivery was 10,691. The number was among the highest since year 2000. It ranged from above 700 to 900 deliveries monthly.

Table 3: Mode of delivery at Hospital Sultanah Nur Zahirah in 2004

Mode of delivery	**Total number**	**Percentage (%)**
Spontaneous vaginal delivery	10,691	79.0
Forcep	155	1.5
Vacuum	127	0.9
Breech	378	2.8
Elective and emergency caesarean section	2,130	15.8

The caesarean section rate was increased compared to previous year. The total number of caesarean section was 2130 which contributed about 20% increment of the rate. Fetal distress was still the most common indication of caesarean section. It contributed about 20 % of all caesarean section. It was followed by breech and abnormal lie as second and third indication for caesarean section respectively.

Table 4: Number of caesarean section in 2004.

	Number of caesarean section	**Percentage (%)**
Emergency	1467	68.9
Elective	663	31.1
Total	2130	100

Table 5: Indications for caesarean section

Indications	Number of caesarean section	Percentage
Fetal distress	706	33.1
Breech	232	10.8
Failed induction	48	2.2
Abnormal lie	214	10.0
Multiple pregnancy	82	3.8
Abruption placenta	46	2.3
Two / more previous scar	93	4.4
Poor progress	107	5.0
Placenta praevia	76	3.6
Cephalopelvic dispropotion	6	0.3
Severe pre-eclampsia	407	19.1
Cord accident	11	0.6
Others	102	4,8
Total	2130	100

PROTOCOL OF CAESAREAN SECTION IN HOSPITAL SULTANAH NUR ZAHIRAH

The maternal operation theater is situated at the labour ward. Elective and emergency caesarean sections are performed from 8 am till 3 pm at the maternal operation theater. The operations outside these hours are performed at the general operation theater. The maternal operation theater is unable to function through twenty four hour due to inadequate nurse staffing and anesthetists.

Elective caesarean section is done at 38 week of gestation. However, this is excluded if indicated by obstetrician for maternal or fetal reason.

Cases which are seen in clinic and requiring caesarean section are booked for the operation. A protocol for admission is followed and specialist is informed of the admission.

A team of house officers, medical officers and specialist / consultant is placed in charge of the ward on two monthly rotations. Those who are planned for operative delivery is seen at least by medical officer and again by the obstetrician during morning ward round. An anesthetist medical officer is placed in charge for the pre-operative assessment. Patients are seen by the medical officer a day before operation.

One medical officer is in charge of the maternity operation theater on two monthly rotation basis. The obstetrician performs all the surgeries during the office hours.

An anesthetist medical officer runs the maternal operation theater during the day. Anesthetists in the general operation theater will be called to handle and assist the complicated cases.

Complicated cases such as fetal distress and prematurity are attended by paediatrics medical officer on call in the operation theater to assist in resuscitation.

CAESAREAN SECTION

Caesarean section is one of the most commonly performed surgical procedure in obstetrics. It is almost certainly one of the oldest operation in obstetrics.

The surgical technique varies from surgeon to surgeon. Improved safety is related to the improvement of the technique. So, it is important that the trainers and trainees are familiar with the basic surgical technique and that the best practice is followed. Recognition of the best method of performing caesarean section will minimize the morbidity and mortality. There was higher mortality rate following caesarean section in the earliest century. It was estimated at about 75%.

Munro Kerr in Glasgow had modified an operation developed by Kronig (transperitoneal lower segment section with extraperitoneal closure). He had introduced his method of transverse incision in the lower uterus in 1911. The procedure was further refined and accepted as standard procedure in 1949. This occurred at the 12th British Congress Obstetrics and Gynaecology.

One variation of his method was the use of lower transverse abdominal incision introduced by Pfannenstiel and published in 1900. This method has become a standard procedure in many country because of cosmetic consideration and low incidence of wound hernia. However it has some disadvantages. It may be slow for emergency cases. The subaponeurotic dissection of the rectus sheath takes time. It is sometimes accompanied by troublesome bleeding from perforating vessels. Postoperative haematoma and abscess formation are common. Also, it may

be accompanied by unsightly guttering when patient stands erect as it does not strictly follow Langer's line.

Dr Michael Stark had developed new technique in 1983. The method was called Misgav Ladach method. The method grew out of an approach to opening the abdomen developed by Joel-Cohen for the abdominal hysterectomy. This method of opening the abdomen has been practiced by a number of obstetricians for caesarean section following Dr Michael Stark. He has added a number of a new feature to make a package of good practicing steps, which has not been previously used. The results of the Misgav Ladach method in many non-randomized trials showed many impressive outcomes. They are include less traumatic to the mother, less need of the antibiotic, quicker post-operative recovery, a shorter period for normal bowel function, less peritoneal adhesion and less scarring. It is also a method to cause less bleeding in abdominal layers and easy to learn.

The modified Misgav Ladach method is a combination between the conventional and original Misgav Ladach method. The modifications are based on the latest recommendation by Royal College of Obstetrics and Gynaecology (RCOG).

LITERATURE REVIEW

LITERATURE REVIEW

HISTORICAL BACKGROUND OF CAESAREAN SECTION

Caesarean section refers to the surgical procedure for delivery of the fetus either alive or dead through an incision in the abdominal wall and uterine wall.

The origin of the caesarean section name is remains in debate. One explanation of the origin of the term is that it was named for the famous Roman Emperor – Julius Caesar, claiming was cut from his mother womb. However Julius Caesar was most likely not delivered abdominally as most section were fatal to the mother due to non-sterile surgical technique at that time. Julius Caesar's was reported to be alive and doing his campaign in northern Europe 30 years later. Some authors say it arises from the Latin verb "caedare" meaning "to cut". Others claimed it comes from Roman decree, "Lex Caesarean" that described the procedure used to save infants who the mother either dying or dead during the delivery. The oldest description of caesarean birth found in cuneiform tablet from Mesopotamia dating back to the second millennium B.C.

The early literature reported most of the mother died during or after the procedure. The first living child was reported in 508 B.C who was delivered by postmortem caesarean delivery. The oldest report of survival both mother and child only appeared in 1500. This was followed by a few number of survival rate in the subsequent years.

Before mid-19th century caesarean delivery was forbidden on living women due to higher maternal risks. Few methods such as symphysiotomy, craniotomy, version and extraction were used to facilitate the delivery. Thus many obstetricians abhorred caesarean delivery and performed it only in died mother. However there were few obstetricians who supported caesarean section.

Until middle of 19th century, most of the obstetrician believed that the uterine wound was best left unsutured, due to risk of infection and loosen of the suture during uterine contraction. Later it was found to be wrong and the first successful uterine suture was reported by Jean Le Bas (1717-1787). He described three suture were used to close uterine incision and four suture for abdominal wound. Between 1867 and 1880 about 20 cases of successful uterine suturing were reported in America. About half of the mother survived with no complication reported.

Between 1737 and 1820, the caesarean sections were performed mainly for gross pelvic abnormality. All the mothers were reported died within 48 hours after the operation. Jane Foster firstly reported a survived caesarean section for abnormality pelvic in 1793. Dr. Bonsfield in 1854 described in detail two caesarean sections done to women for severe osteomalacia. However both of the mothers died due to sepsis and haemorrhage on second day of the operation. Then Porro in Milan (1876) had introduced the operation of caesarean section with subtotal amputation of the uterus. This saved the life of the mother but precluded any further pregnancies. The caesarean section did not become widespread due to high maternal morbidity and mortality. It was continued till the end of 19th century when introduction of antiseptics

begun. Also, this was accompanied by improvement of the surgical techniques that made the surgery less complication.

When Murdoch Cameron (1878) managed to perform eight consecutive caesarean sections without a single maternal death by suturing the uterus, this was seen as a major breakthrough. Max Sanger in 1882 advocated the suturing of the uterus after the delivering the child. Most of the authors agreed this is one of the first major techniques in reducing maternal morbidity and mortality.

The extra-peritoneal operation described by Frank in 1907 and Latzko in 1909 failed to gain popularity. The transperitoneal lower segment operation with the vertical incision advocated by Kronig in 1912. This technique was modified by Munro Kerr in 1926 as a transverse lower segment operation and has been proved to be much safer. It was universally accepted since then. This is supported by the report of the risk classical operation by both Kerr and Eardley Holland in 1921. Then, the technique of transverse lower segment section became widespread and popular in Britain. A review of about 100 cases showed marked less complication than the previous techniques. Subsequently, 1939 Charles Marshall presented the review of the subject and described in detail about the operative technique procedure. The procedure was further refined and accepted as standard procedure in 1949. This occurred at the 12th British Congress Obstetrics and Gynaecology.

One variation of his method was the use of lower transverse abdominal incision introduced by Pfannenstiel in 1896 and published in 1900. This method has become a standard procedure in

many countries because of cosmetic consideration, low incidence of wound disruption, dehiscence, hernia and early ambulation. Moawt and Bonar reported a wound dehiscence rate of 2.4% (48 of 1635) after midline incision, compared to only 0.37% (2 of 540) after Pfannesteil incision. Similar finding when comparing transverse and vertical incision have been reported by other authors. One group found an eight fold increase in post-operative wound dehiscence and infection in vertical incision.

However the Pfannesteil incision has more advantages than the other type of incision. Currently the incision is the most common performs during caesarean section compared to other type of abdominal incision.

MISGAV LADACH METHOD

The thinking of fasten the operation has lead to the development of a new method. The method was introduced by Dr Michael Stark in 1983 and known as Misgav Ladach method. This is a name of the hospital in Jerusalem where the method was evolved.

The new method grew out of an approach to the opening the abdomen developed by Joel Cohen for abdominal hysterectomy in 1954. Dr Michael Stark has added a numbers of new features to make the perfect refinement package. In the Pfannensteil method the body is perceived as static. The incision cuts its way with disregard to structural anatomy. In the Joel Cohen incision, the opening follows the anatomical structures and attempt of surgical minimalism technique.

The advantage of Misgav Ladach technique has been proven in many non-randomized trials. These included studies by Elisabeth D and Marie LD in (1996), Federici et al (1996), Zienkowicz Z et al (2000), Oleszczuk et al (2000), Ansaloni et al (2001), Redlich and Koppe (2001), Heidenreich and Borgmann (2001), Studzinski (2002) and Fatusic et al (2003). The advantages of this method were include less traumatic for mother, quicker post operative delivery, less scarring, shorter period to normal bowel function, less febrile reaction, less peritoneal adhesion and less antibiotic uses. It is also said to be shorter operating time in elective or emergency case and cause less bleeding in abdominal wall.

The first randomized controlled trial of this method has been done in Department of Obstetrics and Gynaecology Uppsala Sweden in 1996. It was reported by Elisabeth Darj and Marie-Louise

which revealed a significant quicker technique to perform than Pfannensteil method with reduced of post- operative pain and amount of bleeding during procedure.

Knowledge of the method has spread after International Federation of Obstetrics and Gynaecology (FIGO) World Congress in Montreal in September 1994. Four presentations showed the advantages of the method in the following FIGO Congress in Copenhagen in August 1997.

Table 6: Method description of conventional, Misgav Ladach and modified Misgav Ladach methods.

Conventional method	Misgav Ladach method	Modified Misgav Ladach method
The midline was identified. A few marks were made in the skin crease to give good lining of incision.	The midline was identified and three marks were pinched in the skin crease - one in the midline and one at either end of the planned incision.	The midline was identified as in the Misgav Ladach method.
The skin incision is a Pfannenstiel incision. It is a curved skin incision done following the Langers line, about 1 or 2 fingers breath above the symphysis pubis. The skin is cut about 14 cm and together with subcutaneous tissue.	The skin was stretched slightly sideway in the direction of the skin crease to avoid distortion and give straighter incision that follows Langer's line - this incision must be a straight transverse superficial incision about 3cm below the line joining the anterior superior iliac spines (This is called Joel Kohen	The skin incision follows the Misgav Ladach method.

	incision). The skin is cut through about 16cm long and it should not go into the subcutaneous tissue.	 This step followed the Misgav Ladach method.
The incision is deepened with the scapel through the fat to the rectus sheath.	The incision in the midline is deepened with the scalpel by transverse cut of about 2-3cm through the fat to the rectus sheath.	The incision made as in Misgav Ladach method.
A small transverse incision about 3cm is made in the sheath by using the scalpel. The incision then enlarged bilaterally by scissors, with one blade under and another blade above the cut sheath.. The scissor pushed along the direction of the fiber in the	A transverse incision about 2-3cm is made in the sheath with the scalpel. The incision then enlarged bilaterally by scissor, underneath the fat and subcutaneous tissue without disturbing them. The tip of a partly open pair of scissors then is placed (supported	The incision of the rectus sheath also follows the Misgav Ladach method.

transverse direction following the curvature of the body as go further out	underneath by left index finger), with one blade under and another blade above the cut sheath. At this level the rectus muscle does not need separation from the sheath because it is above the level of the pyramidalis muscle and move freely over the fascia	
The rectus muscle then pulled apart by using a forcep.	The rectus muscle then pulled apart – this is done by pushing the index and middle fingers of the surgeon and assistant in the midline between the rectus muscle, encircling the whole muscle and then pull with smooth, balanced and increasing force. The movement is slightly outward rotation causing the upper section to open more on a curve than a lower section.	The rectus muscle is handle as in Misgav Ladach method.

	Sometime the index and middle fingers of the surgeon and assistant can be placed over the two in order to get the force for big opening.	
The parietal peritoneum was identified and lift up with the forcep. The layer will be cut by scissor after checked for the underneath structure. The avascular area is chosen to avoid unnecessary bleeding. The hole will be enlarged by pulling the cut peritoneum transversely.	The parietal peritoneum then stretched open in a transverse way. The index finger is used to stretch the tissue repeatedly until a small hole is made. The part of stretching must be freed from any vessels. The hole is enlarged by stretching it in a caudal and cranial simultaneously.	The parietal peritoneum is approached as in Misgav Ladach method.
The lower segment of the uterus and bladder are identified after the abdominal cavity entered.	The lower segment of the uterus and bladder are identified.	The lower segment of the uterus and bladder are identified.
The uterovesical fold is lifted	The uterovesical fold is	The uterovesical fold incision

up using forcep. A small incision about 2 cm made on the fold and enlarged bilaterally about 10 cm by using scissor. Area of vascular must be avoided.	identified and lift up using forcep. The transverse superficial incision is made through the visceral peritoneum about 1 - 2 cm above the bladder limit with the scalpel. Area of blood vessels must be avoided and go out far enough on either side about 10 – 12cm so that the head and the baby can be delivered through the opening. Use a retractor to give good visibility with the assistant following surgeon movement as cutting done with the scalpel.	done as in the Misgav Ladach method.
The cut visceral peritoneum and urinary bladder then pushed downward to avoid injury. This was done by using swab.	The cut visceral peritoneum and bladder pushed down using two fingers or a swab.	The cut visceral peritoneum and bladder pushed down using a swab.

A small transverse incision (1 -2 cm) in the lower uterine segment made with a scalpel. It is deepened by using small forcep until the uterine cavity entered. Two fingers (usually index and middle fingers) admitted into the uterine cavity followed by the tip of a partly open scissors. The incision is enlarged bilaterally using the scissor. The finger was used as guidance to avoid injury to baby.	A small transverse incision (about 1 – 2cm) made in the lower uterine segment with a scalpel. It is deepened with small forcep into the uterine cavity. The incision then stretched transversely to either side by using the thumb (mainly to steady) and the left index finger to separate the uterine muscle fibers. If possible, open more to the right than the left since uterus in the third trimester is usually rotated towards the right.	The uterine incision made follows the Misgav Ladach method.
The hand introduced into uterine cavity and placed below the baby head for the delivery.	Then, the hand introduced into uterine cavity and placed below the baby head and pulled it for the delivery.	The hand will be placed below the baby head for the delivery as in Misgav Ladach method.
The placenta will be removed	After the delivery, the	Control cord traction