

Caesarean Section
Under Local Anaesthesia

**FOGSI National Initiative on Relevance,
Techniques and Advocacy**

An analysis of practices, and recommendations

The proceedings of national consensus meet at Thiruvananthapuram, Kerala
on 3rd July 2004

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Chapter 1

Executive Summary

In resource limited settings coupled with weak management of public funded public hospitals in India, mothers face the risk of death due to pregnancy and the maternal mortality rate is high. One significant cofactor seems to be the delay in doing caesarean sections due to non-availability of trained anaesthesia staff. This situation is likely to continue at least for a decade or more till sufficient anaesthesia staff are available. But by that time thousands of mothers may die. These women are being denied the right to live only because of their fertility! The Kerala Federation of Obstetrics and Gynaecology (KFOG) is of the opinion that if caesarean section could be done under local anaesthesia, many women's lives could be saved. Various reports attest to the safety of local anaesthesia for major surgery like caesarean section.

A consensus workshop on "Caesarean Section under Local Anaesthesia (CSLA) was convened by the KFOG on July 3rd at Trivandrum, Kerala to discuss the issue and to develop recommendations, guidelines and to plan any follow-up actions felt necessary. Many dignitaries attended the meeting including

Dr. Behram Anklesaria, (President FOGSI), Dr. D.K. Tank, (President-South Asia Federation of OBGYN, and President Elect-Asia & Oceania Federation of OBGYN); Dr. Shirish Patwardhan, (Chairman of the Safemotherhood Committee of FOGSI), Dr. Suneeta Mittal, (Professor & Head, All India Institute of Medical Sciences New Delhi), Dr. N.S Iyer, (Assistant Project Officer, UNICEF, Chennai). Altogether 30 participants participated in the workshop. The presence of a senior advocate specialized in consumer protection cases helped in clearing the doubts on legal issues.

Plenary sessions, group discussions and debates were held on the various aspects of the CSLA procedure. A video demonstration of the procedure was done by Dr. Krishnan Unni, Medical Officer, PHC Kadampazhippuram. Dr. Vanaja, Dr. Sreenivasan and Dr. N.S Iyer based on their experience of several thousand cases gave first hand information on the procedure.

Conclusions and Recommendations

It was concluded and agreed by all the participating experts that under the prevailing circumstances,

1. CSLA is an appropriate and safe alternative in situations where there is limited anaesthesia service and the procedure should be promoted nationwide. Guidelines for the procedure were discussed and agreed upon and incorporated in the proceedings.

2. CSLA can be considered as a safe alternative anaesthesia in the following situations in Obstetric Practice.

- Where there is no readily available anaesthesia service
- When medical complications warrant the use of local anaesthesia
- On patients request

3. CSLA It is safe and is beneficial for the mother and child as the:

- Can be a life saving procedure
- Recovering time is less
- No or very little side effects
- Economical (for both mother & Government)
- Post operative care is relatively easy
- Fetus will be in a good condition

Hands on experience is essential It was decided to convene a National level meeting involving Government Officials and agencies like UNICEF and WHO.

4. It is important to create due awareness on this procedure by articles in journals and by organizing workshops and seminars.

5. The concept of CSLA and its appropriateness in prevailing Indian conditions may be given wide publicity through leading articles in the FOGSI journal and other regional publications.

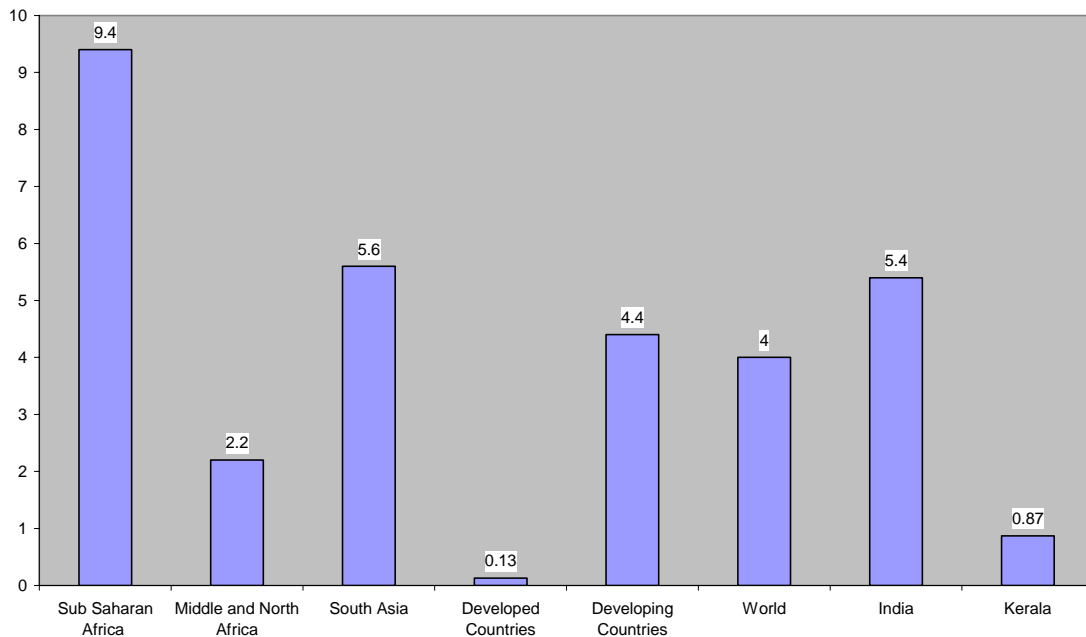
Chapter 2

Relevance of CSLA

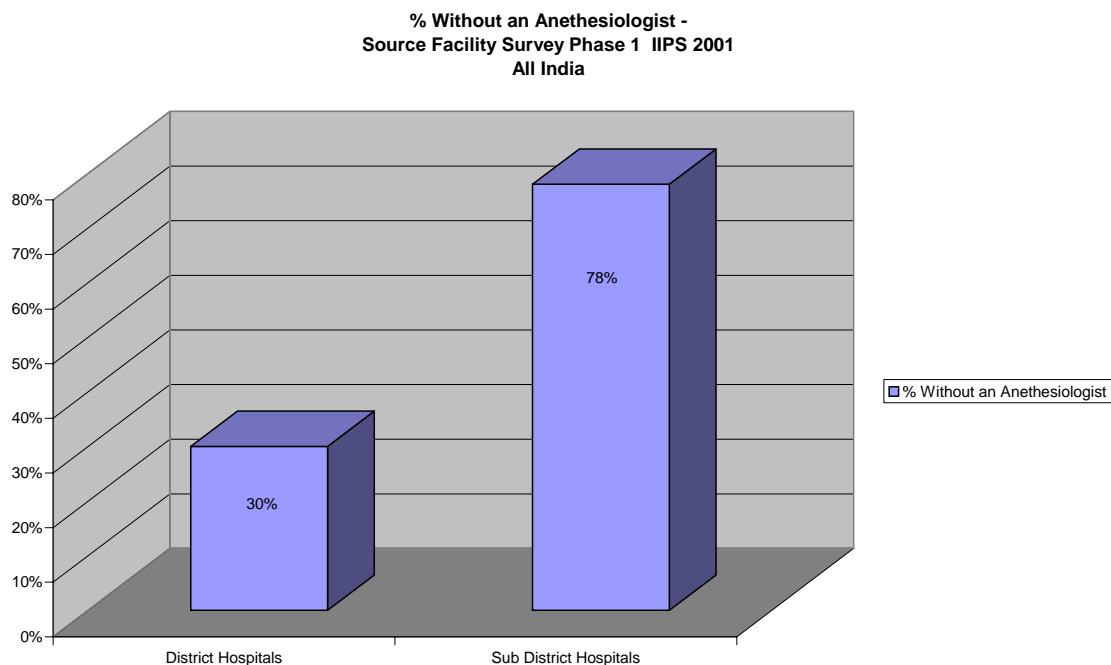
Maternal mortality continues to be a major public health problem in India. Apart from the health perspectives, modern societies view maternal death as a reflection of the status enjoyed by the women. In less developed societies the status of women is low and is always at the receiving end. Their only role seems to be child bearing and rearing. Naturally they deserve a better dealing.

In India maternal mortality of 407 per 100,000 deliveries is very high compared to its neighbouring countries (Sri Lanka: 90, Thailand: 25, China: 60). Even in Kerala, which is, show cased as a model to other Indian states in the health sector, maternal mortality is unacceptably high (87 maternal deaths /100,000 live births)

MMR/ 1000 Live Births - Source SOWC, UNICEF 2004, Kerala : The progress of Indian States, 1995



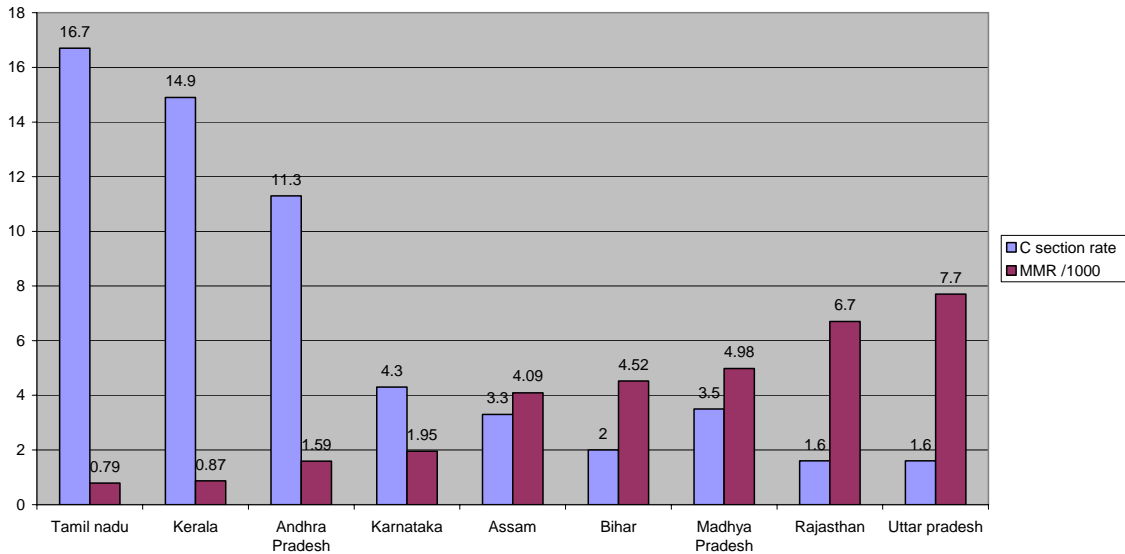
The Kerala Federation of Obstetrics and Gynecology (KFOG) has been actively engaged in addressing the problem by introduction of a uniform obstetric protocol throughout the state and instituting confidential review of maternal death. One of the significant co-factors for maternal mortality in India seems to be delay in doing caesarean sections due to non-availability of trained anaesthesia staff.



This is likely to continue at least for a decade or more till sufficient anaesthesia staff are available. But by that time thousands of mothers will have died because a caesarean section could not be performed under general anaesthesia. These women are being denied the right to live only because of their fertility.

The KFOG is of the opinion that if caesarean section could be done under local anaesthesia, this problem can be circumvented to a great extent. Various reports attest to the safety of local anaesthesia for major surgery like caesarean section.

C section Ratio & MMR/1000.
 Source -Evaluation of maternal care -GOI 2001.
 CRC India First Periodic Report -DWCD 2001



Background to Consensus Meeting

In this context, KFOG has decided to organize a consensus meeting to review the acceptability, suitability and advisability of the CSLA procedure in the Indian context, especially in the rural setting.

Representatives from Health Services Department of Kerala, Federation of Obstetrics and Gynecological Societies of India (FOGSI), Office bearers of KFOG, President and or Secretary of O & G societies of Kerala, Members from legal circles, doctors working in the rural areas and junior doctors etc were invited for the meeting. The Union Secretary for Health and Family Welfare and Representatives of WHO and White Ribbon Alliance were invited to the meeting, but due to prior commitments they could not attend the meeting but expressed their desire to get a copy of the proceedings. The UNICEF Field Office for Tamil Nadu and Kerala extended the financial and technical support to the meeting and sent Dr. N.S. Iyer, Project Officer, Safemotherhood to share his extensive first hand experiences with CSLA having successfully performed the procedure over 3000 times without complications.

The venue was the conference hall of Uday Samudra Leisure Beach Hotel, Kovalam, Trivandrum, Kerala.

Chapter 3

Summary of the Proceedings.

Dr. V.Rajasekharan Nair in his welcome speech outlined the scenario prevailing in the reproductive health sector in India. A large number of maternal deaths taking place in India can be avoided by the timely intervention including caesarian section. The ratio of gynaecologists to anaesthetists 3:1 is in cities but worse in rural areas and in most FRU's in the country there is no anaesthetist at all. He further stressed that CSLA should not be seen as a primitive or retrograde step or that it is not suitable for an emerging nation like India. Instead it should be considered as a life saving strategy especially in rural Indian women. Though endorsed by WHO (see), evidence based opinions are rare.

While acknowledging that CSLA is a good form of alternate anesthesia, he appealed to the participants to engage in an active discussion on the following questions:

- Is CSLA is appropriate for rural India and should its use be promoted?
- Can CSLA be recommended under ongoing RCH Programme?
- Can FOGSI play an active role in popularizing CSLA?

Terming preventable maternal death as a social injustice to the under privileged, he called for joint action to gain the approval and support of the scientific community, government agencies, legal profession and the general public for CSLA.

Dr. Behram Anklesaria the National President of FOGSI who addressed the delegates supported the views of Dr. V Rajasekharan Nair. He further pointed out that FOGSI should take steps to reduce maternal deaths in India by concentrating on Emergency Obstetric Care (EOC) and CSLA could play a major role in EOC. He also emphasized the fact that in many countries lower abdominal surgery is done under local anaesthesia and found to be safe and effective. But in India very little attention has been given to utilize the potential of local anaesthesia for lower abdominal surgery. He warned that RCH programme will become futile if Emergency Obstetric Care is not extended to all Indian women.

Dr. Shirish Patwardhan the Chairman of the FOGSI Safemotherhood Committee supported Dr. Anklesharia in that said doctors are successfully practicing CSLA in many states in India but published results are scarce. In Maharashtra too, there are many doctors performing Caesarean Section under Local Anaesthesia in Konkan District. He also stressed that the nurses must also be educated about CSLA and develop a positive attitude about it, that it is not inferior to general or regional anaesthesia. The attitude and perception that CSLA is for the underprivileged must be changed and CSLA should be considered as a viable and acceptable alternative to the conventional anaesthesia which will increase the public perception on the issue.

Dr. D.K. Tank the President Elect of Asia -Ocean Federation of OBGYN who joined the issue emphasised that Kerala is the right place to launch a campaign to promote CSLA. According to him, CSLA has to be promoted as an alternative to caesarean section under general anaesthesia or regional anaesthesia. He doubted whether the medical profession needed the approval of any authority as already the technique is widely used elsewhere. He said that CSLA might be promoted even if an anesthetist is available in selected situations. He termed CSLA as an important venture of the Obstetrician/ Gynecologist for the welfare of women. With the concurrence of Dr. Patwardhan, Dr. Tank concluded that CSLA was a legitimate method, that it require no permission from authorities, and that all Government and professional bodies should be approached to sensitize them on CSLA.

Dr. Sunita Mittal, Professor and Head of the Department of Obstetrics and Gynaecology, All India Institute of Medical Sciences, New Delhi highlighted that CSLA is of much relevance in today`s context and that post-graduates must properly be trained in CSLA so that they can go out and practice the technique confidently in the periphery.

Shared Experiences

Four gynaecologists who had served in various hospitals in Kerala and who had each performed more than 1000 cases of CSLA shared their experience with the participants. An interactive question and answer session following each presentation helped in clearing the queries of the audience. Most of the doctors had successfully performed the procedure even in difficult cases and one of them even had the experience of doing a sub total hysterectomy in a case of atonic Post Partum Haemorrhages. Following debates and discussions, the audience along with the national experts consensually agreed with the views of those who made various presentations that CSLA is advantageous since:

- No time is lost in performing a life saving caesarean section
- Patient's protective reflexes are retained during the procedure
- Safe even for mothers in poor condition
- No post operative vomiting and less haemorrhage
- Minimal bleeding
- Short recovery time
- Little or no side effects
- Relatively easy post operative care
- Foetus is born in good condition
- Economical for both the Government as well as the public.
- Makes surgical intervention easily available, accessible and affordable.

A video presentation on CSLA by Dr. Krishnan Unni, Medical Officer at PHC Kadampazhipuram, a village in Palghat District was well appreciated by the participants. Dr. Tank opined that the film was ethically made. Earlier Dr. Krishnan Unni narrated his ten years experience in performing CSLA.

On Legal issues

Advocate Mrs. Lyla a senior advocate specializing in Consumer protection cases and a special invitee to the meeting informed that a doctor could use his knowledge and skill in providing treatment. She reminded that written informed consent must be obtained from the patients. She cited a Supreme Court ruling that if due care and quality is taken then there is no negligence from the part of the doctor. Dr. Vanaja informed that there were no complaints from the patients so far. This is because the patients are motivated and convinced about the circumstances and ready to accept the procedure rather than being referred to another far off institution. Dr. Tank pointed out that complications do arise in all forms of surgery even in well equipped set ups and CSLA is no exception, but appropriate care should be taken to prevent them. Dr. V.P. Paily suggested that there should be no compromise on patient monitoring. Even if there is no anaesthetist, the patient should be closely monitored by a trained person throughout the surgery. Wherever possible it should also be recommended that electronic monitors like ECG or Pulse oximeter should be procured for better safety. All the participants accepted his suggestion.

The Group Discussion

Group I - The relevance

A group of experts met for half a day to discuss the Ankleshana relevance of CSLA to Indian context. This group included Dr. Behram (Leader), Dr. S. Patwardhan, Dr. N.S. Iyer, Dr. Sethulekshmi, Dr. Saravana Kumar, Dr. P.K. Symala Devi, Dr. Vanaja, Dr. Kumari G Prema, Dr. Ajitha Kumary, Dr. James.

The group felt that maternal mortality continues to be a major public health problem in India. In India maternal mortality of 407 per 100,000 deliveries is very high compared to its neighboring countries. Even in Kerala, which is showcased as a model to other Indian states in the health sector, maternal mortality is unacceptably high (87 maternal deaths /100,000 live births) when compared to some other South-East-Asian countries like Sri Lanka (30 maternal deaths / 1,00,000 live births) and China (60 maternal deaths / 1,00,000 live births). In some North-Indian states MMR is as high as (770 maternal deaths /1,00,000 live births in Uttar Pradesh and 660 maternal deaths /100,000 live births in Rajasthan).

- Although a large majority of maternal deaths (70%) are due to Post Partum Haemorrhages and Post Partum events we feel that many of the PPH and event are due to intrapartum events like prolonged labour / unskilled management of II stage of labour, uterine atony or due to prolonged labour. Even Post Partum septicemia has an origin due to absence of timely emergency obstetrics care, caesarian section being an important component.
- One of the most important deficit in availability and access of emergency Obstetrics care is unavailability of a caesarian section in spite of availability of a competent caesarian section operator. Here there is a problem of non availability of a trained anaesthetist. Training of anaesthetist capable of giving anaesthesia in a short period of time does not seem to be acceptable alternative.
- Last minute transfers to distant areas can be avoided if an OB. GYN specialist attached to the FRUS acquire confidence in doing timely CSLA at the FRU level. More CSLA performed at the FRU levels will reduce the load in tertiary centres and prevent referral of moribund and neglected obstetric cases.
- Decision-incision time for caesarian section can be shortened by CSLA as waiting time for getting the anaesthetist is saved. Besides saving mothers life a timely CSLA is far better than a delayed caesarian section in tertiary level even from the point of view of reducing perinatal morbidity and mortality.

Detail given in annexure 1

Group II -

Another group of experts including Dr. D.K. Tank (Leader), Dr. Suneeta Mittal, Dr. Kuttamony, Dr. V. Rajasekharan Nair, Dr. Sreenivasan, Dr. T.L. Sujatha, Dr. T Sheela Shenoy, Dr. Krishnan Unni discussed in depth the indications , contra indications and requirement for the CSLA. A protocol was suggested by the group and accepted by all the participants of the workshop. The members discussed the indications, contra indications and the requirements. The techniques were analysed in detail and step by step protocol prepared. (Annexure 2)

Group 3

This group which consisted of Dr. V.P. Paily (Leader) Dr. Aysha Beegum Dr. C.P. Vijayan, Dr. N.S. Sreedevi, Dr. C. Guptha, Smt. Lyla .S, Dr. Sakunthala Bharathi, Dr. Beenakumary.

They debated on apprehensions and issues in promoting CSLA came to the unanimous conclusion that proper counseling should be done before surgery. There should not be any compromise on monitoring. Public and Government Officials and the legal profession should be sensitized, and the group felt that the procedure should never be projected as a poor man's method. The group came to the conclusion that patients' informed and written consent for CSLA as an alternative procedure is very important in the face any possible legality. In case of complications so long as doctor is able to prove that CSLA is performed with good intention without compromising on close monitoring he or she need not worry about the Consumer Protection Act.

The deliberations of the three groups were presented by the team leaders. Following an active interactive question answer session the audience as well as the national experts came to the unanimous conclusion that

CSLA can be considered as a safe alternative anaesthesia in the following situations in obstetric practice.

- Where there is no readily available anaesthesia service
- When medical complications warrants the use of local anaesthesia
- On patients request.

Conclusion on the Relevance of CSLA in the Indian context.

- Lack of access or non availability of emergency obstetrics care is the main reason for the high maternal mortality. Although a large majority of maternal deaths (70%) are due to post-partum haemorrhages and post partum events of the PPH and event are due to intrapartum events like prolonged labour/ unskilled management of II stage of labour, uterine atony or due to prolonged labour. Even post-partum septicemia has an origin due to absence of timely emergency obstetrics care. CS being an important component.
- One of the most important deficit in availability and access of emergency obstetrics care is unavailability of a caesarian section in spite of availability of a competent caesarian section operator. Here there is a problem of non-availability of a trained anaesthetist. Training of anaesthetist capable of giving anaesthesia in a short period of time does not seem to be acceptable alternative.
- Caesarian sections under local anaesthesia by a trained and experienced person is advocated whenever a competent anaesthetist is not available.
- At present most post-graduates being trained in the discipline of O&G in medical schools receive almost no training in the crucial skill of performing caesarian sections births under local anaesthesia.
- O&G specialist all over the world including India for example in Kerala and Madhya Pradesh especially in rural areas have clearly shown the safety, efficiency and efficacy of CSLA. A few of the specialist here performed CSLA procedure in excess of 500 reaching up to 4000 without serious complications. Any post-graduate student or practicing obstetrician can easily be trained in this vital procedure. This would be of great benefit in fulfilling the unmet need of caesarian section as a part of emergency obstetric care.
- Last minute transfers to distant areas can be avoided if an **OB.GYN** specialist attached to the FRUS acquire confidence in doing timely CSLA at the FRU level. More CSLA performed at the FRU levels will reduce the load in tertiary centres and prevent referral of moribund and neglected obstetric cases.
- Decision-incision time for caesarian section can be shortened by CSLA as waiting time for getting the anaesthetist is saved.

- Besides saving mothers life a timely CSLA is far better than a delayed caesarian section in tertiary level even from the point of view of reducing perinatal morbidity and mortality.
- CSLA is ideal for many indications even in the presence of an anaesthetist. In indications like severe anemia, eclampsia.
- CSLA initiative should be combined with other important equally important initiatives like raising Hb% before the mother reaches term & managing postpartum events.

Recommended Protocols For CSLA

1. Indication:

- nonavailability of anesthetist
- myasthenia gravis
- failure of regional anesthesia & patient wishes to be awake
- on demand
- pre-eclampsia, eclampsia
- chronic hypertension
- heart disease
- hepatittis
- pulmonary disease
- placental abruption
- severe anemia

2. Contra indications:

- Previous 2 CS
- Associated adnexal pathology.
- Obese patient
- placenta previa
- Apprehensive cases
- Fibroid

3. Consent:

- Counseling of patient and family and informed consent as an alternative procedure in situations of non-availability of anaesthetist
- Patient's inability to travel to referral centre
- Patients desire to have surgery done at the center where it is performed
- Clear explanation that this is an alternative strategy.

4. Infrastructure & man power - ensure

- proper sterilization facilities
- availability necessary drug
- blood storage is preferred
- staff nurse.
- another floor nurse
- manual assistants
- post op monitoring nurse
-

5. Pre medication

- Xylocaine sensitivity to be tested.
- 15-minutes before surgery Inj Atropine Sulphate one ampule
- Inj Phenergan 25 mg (or) IU
- Inj pentazocin 30 mg (or) IU
- Inj phenergan 25 mg (or) IU
- Oxygen should be available in the theatre .
- After delivery of fetus, Inj Pethidine 50 mg intra muscularly and Inj Pethidine 50 mg IV and 50 Mg IM

Being gentle in the tissue handling is the key in the technique.
Prophylactic antibiotic to be given.

6. Technique

Incision:- Depending on the surgeon's choice.

Infiltration of the rectus sheath and peritoneum after opening are standard.

Incision on the uterus.

Meticulous suction to avoid contamination.

Vacuum cup or forceps for delivery of the head can be used.

Dose of local anaesthesia: 5ml /kg of body wt of 1% solution.

or

4.5mg/kg of xylocaine

Suturing of wound- any standard technique

Monitoring of patient during and post operation.

(1) Cardiac monitor or pulse oxymeter preferred.

(2) Proper post operative care to be under taken.

Only tubectomy procedures can be under taken along with CSLA

7. Training

- Master the technique with at least 50 cases when anaesthetist around.
- At least 20 cases under local anaesthesia with anaesthetist stand by.

Recommendations on Appropriateness and Follow-up Action

- As there was a general feeling that local anaesthesia can be offered as an alternative form of anaesthesia in appropriate situations as discussed earlier, it was decided to popularize the same by the following strategies. Dr. Behram Anklesaria, president FOGSI agreed to take the necessary follow up actions, with the help of the safe motherhood committee chairman, Dr. Shirish Patwardhan.

- The concept of CSLA and its appropriateness in prevailing Indian conditions may be given wide publicity through leading articles in the FOGSI journal and other regional publications.
- To collect information on doctors who are already practicing this technique.
- To include CSLA as a topic in forthcoming conferences.
- To convene a National level meeting on CSLA preferably at New Delhi and to involve the officials from Ministry of Health and Family Welfare in charting out future plans.
- To organize live workshops in many places so that other doctors and health care providers will get convinced about the ease and safety of the procedure.
- To involve agencies such as UNICEF, WHO etc in giving necessary support for the popularization of CSLA.

Tips to the beginners.

- Learn the technique under regional anesthesia
- Master the technique
- Try cesarean under local anesthesia when anesthetist is available around
- Counseling & informed consent
- Finally with confidence start alone

Annex 1

List of Participants

National

Dr. Behram Anklesaria , President, FOGSI

Dr. D.K. Tank, President- South Asia Federation of OBGYN, President Elect-Asia and Oceania Federation of OBGYN

Dr. Shirish Patwardhan, Chairperson, Safe motherhood Committee, FOGSI

Dr. N.S. Iyer, Project Officer, UNICEF, 2 Chitaranjan Road, Teynampet, Chennai-600018.

Dr. Suneeta Mittal, HOD, Dept. of OBGYN, AIIMS, New Delhi

Dr. Sakunthala Bharathi, President, OGSSI, Govt. Kasturba Gandhi Hospital for Women & Children, Chennai-600005.

Dr.Chandrakantha Gupta, CHC, Kukshi Dhar Dt., Madhya Pradesh

Kerala State.

Dr. T.K. Kuttamony,Addl.Director,Kerala Health Services,Trivandrum.

Dr. Aysha Beegum. A,Nodal Officer, FRU, Office of the DHS ,Trivandrum

Dr. Kumari G. Prema, Deputy Director, Maternal Health, Trivandrum.

Dr.V. Rajasekharan Nair, President, KFOG Thekke Kappil House, Chalakuzhy Road, Medical College P.O., Trivandrum-695011.

Dr. PK. Syamala Devi, President Elect, KFOG, 4/161, Kowdiar, Trivandrum 695 003

Dr. V.P. Paily, Chairman, Maternal& Foetal Medicine Committee, KFOG ,Vakkanal, East Fort, Thrissur-680005, Kerala.

Dr. CP. Vijayan, Hon. Secretary, KFOG, Asst. Professor OBGYN, MCH, Kottayam

Dr. TV. Saravana Kumar, Jt. Secretary, KFOG, Asst. Prof., SAT Hospital, Trivandrum

Dr. K.A. Sreenivasan, Deputy director of health services, (Retd.), Kodakkattil, Main Road, Vadakkanchery, Kerala-680582

Dr. S. Ajithakumary, President, O&G Society, Alapuzha, HOD, O&G, MCH, Alapuzha

Dr. N.S. Sreedevi, President, O & G Society of Calicut and HOD , O&G, Medical College, Calicut

Dr. Hariprasad. K, President, O&G Society, Kannur, Lourdes Hospital, Thaliparambu

Dr. Sheela Shenoy T, Prof. OBGYN, Medical College, Trivandrum.

Dr. Sujatha T.L., Treasurer, O&G Society, Trivandrum, Kerala. Asst.Prof. OBGYN, SAT Hospital, Medical College, Trivandrum-695011.

Dr. Beenakumari R., Hon. Secretary, O&G Society, Kottayam Asst. Prof. of OBGYN, Medical College, Kottayam.

Dr. S.D. Vanaja, Gynaecologist, Tirur, Punnakkal House, Kuttipuram Road, Tirur, Malappuram District, Kerala

Dr. Sethulakshmy B, House no 15/220-1, Thottakkara ., Ottapalam Palakkad District.

Dr. P. Krishnanunni, Medical Officer, PHC, Kadampazhipuram, Palakkad

Dr. Pio James, PG student, SAT Hospital, Trivandrum

Smt. S. Laila, Advocate, TC 76/1214, Gangothri, Bharath Singh Road, Petta, Trivandrum.

Dr. Lakshmi BS, Consultant Gynaecologist, SUT Hospital, Trivandrum 695004

Dr. Babu, Asst Prof in Health Education, SAT Hospital, Trivandrum.

Annex 2

The Programme schedule

8.45: Registration

9.00: Welcome speech:

Dr V. Rajasekharan Nair

9.15: Session I

Chair Dr. Behram Anklesaria & Dr. V.Rajasekharan Nair

Topic: caesarian section in rural India- the unmet need

Dr. Shirish Patwardhan

Expert comments: Dr N.S.Iyer

9.45: Session II

Chair Dr. D.K.Tank, Dr. Behram Anlesaria &

Dr. T.K. Kuttamony

CSLA - Kerala Experience: Dr. K.A Sreenivasan

Video Presentation of CSLA : Dr. Krishnan Unni
Expert Comments: Dr Suneeta Mittal

10.30: Coffee Break

10.45: Group discussion Participants spilt into three groups to discuss
the following topics:

Relevance of CSLA
Techniques of CSLA
Apprehensions on CSLA

12.00Noon: Presentation by group leaders and discussion

1.00 Lunch.

2 Pm: Future Strategies: Presentation of draft resolution and discussion.

Co-ordinated by:
Dr. Behram Anklesaria
Dr. T.K. Tank
Dr. V.P.Paily

3.30Pm: Vote of Thanks: Dr. C.P.Vijayan

National Anthem

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