Psychoprophylactic Intervention for the Management of Labour Pain

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Most women feel pain during labour and delivery, but the degree of painful sensations varies widely. Many women feel strongest pain, especially during the first two stages of labour. The desire to relieve or remove painful sensations appeared among Obstetricians of ancient times, but it was only during the first half of the 19th century that scientifically grounded methods to relieve pain were developed with the discovery of the anaesthetizing effect of ether and other substances. Ether was first used in obstetrical practice by N.I. Pirogov for application of forceps (1847) and by J. Simpson for the rotation of the foetus (1847). Ether and chloroform were later used for pain relief in labour.

Along with the wide incorporation of pain relief methods into obstetrical practice an intense research of new effective methods of anaesthesia is being carried out. Psycho-prophylactic method of preparing the pregnant for labour developed by Velovsky (1960), is now widely used (Swaminathan, 2006). The method is based on the study of causes of labour pain. The objective of psychoprophylaxis is to remove pain by the action on the central nervous system of the woman.

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The nerve endings (interoceptors), nerve fibers and plexus of the uterus and other parts of the birth canal are excited during labour. The uterine interoceptors are excited due to contractions of the uterine muscles and distension of the lower uterine segment and the cervix. The painful sensations mainly depend on the excitation of the nerve endings in the dilating cervix. As the head of the foetus descends, it excites the nerve plexus in the pericervical region: the distension of the uterine and peritoneal ligaments and the compression of the blood vessels whose walls are innervated with highly sensitive nerve elements, also provoke pain. An additional source of pain during the second stage of labour is the excitation of nerve elements in the perineum and external genitalia.

The excitation of the uterine nerves is transmitted through the nerve trunks to the central nervous system and the pain is reflected in the lower abdomen, the sacro lumbar region, in the groins and the upper parts of the thighs.

Emotional upsets, the conviction that labour pain is inevitable, the anticipation and fear of pain, the fear of labour outcome and of her future baby, etc., are certain psychogenic components of labour pain (Kannamma and Swaminathan, 1990). These emotions inhibit the cerebral cortex and interfere with normal relationship between the cortex and lower parts of the central nervous system. As a result of summation of all these components, the excitation of the nerve endings in the uterus is perceived by the woman as very strong pain.

The nerve elements of the uterus and other parts of the reproductive system are always excited during labour, but painfulness of the subjective feelings, is different in women and depends on the functional characteristics of the nervous system.

Clinical observations show that labour in some women is associated with little pain or is painless altogether. Many women experience moderate pain and withstand it with patience and
without fear. Their behaviour is readily controlled by the medical personnel. This reaction to pain usually occurs in even-tempered women with balanced nervous system (Kannamma and Swaminathan, 1990).

Women with unstable personality are susceptible to attacks of fear and other adverse emotions. The pain threshold is low in them and excitation of nervous elements associated with uterine and abdominal contractions is sensed as strong pain by them. Such parturients are restless, their behaviour is difficult to control and this interferes with normal conduct of labour. Hence the response of the parturient to excitation of the nervous system of the reproductive tract by equal stimuli may be different. The feeling of pain depends on the features of activity of the higher regions of the central nervous system, the cerebral cortex.

Subjective perception of labour pain and the behaviour of the parturient have been studied by a few investigators (Sowndaram and Swaminathan, 1989; Kannamma and Swaminathan, 1990) and they have tried to remove pain by strengthening the emotionality dimension of the woman during pregnancy. The woman must be informed that her labour may be painless provided she totally abides by the instructions of the obstetrician. During psychoprophylactic treatment the woman is taught how to behave correctly during labour. She is given the necessary information concerning physiology of labour and its clinical course. She is also made to realize the feelings that she may experience in various stages of labour with a special emphasis on the fact that pain is not inevitable.

Psychoprophylaxis is a system of measures that should be undertaken from the very beginning of pregnancy and especially four weeks preceding labour as well as during labour.

During pregnancy the woman is given a thorough examination (both on general and obstetric aspects). The obstetrician or health psychologist specialized in obstetrics gets to know the attitude of
the expectant mother to (i) pregnancy, (ii) labour and delivery. The specialist tries to remove fear of labour and to persuade the expectant mother to think that her labour will be painless and successful. The personality of the pregnant woman should be steadily and favourably acted upon during each prenatal visit to the maternity clinic.

Beginning with the thirty fifth or thirty sixth week of pregnancy, the pregnant woman should be given the necessary information about the nearing labour and be taught how to behave during labour so that it may be accomplished without pain.

A special room should be available for the purpose. It must be equipped with all visual aids that might be necessary. If this is not possible, the pregnant woman can be taught in an ordinary room.

Normally four lessons (four or five weeks before labour) would be enough for successful preparation of the patient for labour provided all requirements of such lessons are met such as

(i) undue fears are removed and
(ii) the pregnant woman becomes convicted in successful outcome of labour.

Gist of each of the four lessons, is presented below.

First Lesson

The pregnant woman is acquainted with the anatomy of the female genitalia and the changes that occur in her body. Labour and delivery are described as a normal physiological process. Three stages of labour are described (1) characteristics of the first stage of labour, (2) subjective feelings of the parturient, (3) uterine contractions - their length and frequency, (4) changes occurring in the female genitalia during the first stage of labour, (5) their physiological character (dilation of the cervix), (6) the role of the membranes and the amniotic fluid are explained.
Attention is drawn to the fact that the parturient spends much energy during labour and that the woman should spare her efforts for the main stage of labour marking expulsion of the foetus. She should assume a comfortable position, take food regularly and follow all instructions of the medical personnel.

Second Lesson

The woman is instructed how to behave during regular contractions and during the entire first stage of labour. The pregnant woman is trained physically to perform exercises which promote normal course of labour and reduce painful sensations.

1. Lying quiet
2. Deep and rhythmic breathing during uterine contractions.
3. Inhalation and exhalation with simultaneously rubbing the lower part of the abdomen by finger tips of both hands form the median line over the pubis lateral ward and upward.
4. Rubbing the skin of the sacrolumbar region simultaneously with regular breathing.
5. Pressing the skin to the inner surface of the iliac crests at both anterior superior spines and the outer angles of the Michaelis rhomboid. The skin at the anterior superior spines is pressed by the tips of the thumbs, the palms at the thighs, while at the anterior angles of the Michaelis rhomboid, by the clenched fists put beneath the rhomboid.
7. Resting in the pauses between contractions and dozing if possible.

The exercises should be well mastered by the pregnant woman and performed in the order suggested by the obstetrician.
At the end of the lesson, the pregnant woman is made aware of the causes that may intensify pain during labour (undue fears, restlessness, full bladder etc.). The pregnant woman is explained that these causes of pain may be timely and fully removed by correct behaviour during labour.

**Third Lesson**

The pregnant woman gets information regarding.

(a) second and third stages of labour

(b) subjective feelings of the parturient woman during this period.

(c) recommended positions at the beginning and end of the expulsive period of labour.

The pregnant woman is taught how to hold her breath during abdominal contractions. She is explained that in order to intensify the efficiency of abdominal contractions, it is necessary to hold breath for 10-15 seconds after taking a deep breath. This intensifies the muscular tension. The procedure should be repeated twice or three times during each contraction. The pregnant woman is taught how to breathe and relax her muscles in order to reduce the expulsive effort during disengagement of the head. The placental stage, its duration and the character of contractions during this stage are then described.

**Fourth Lesson**

In this lesson, all the previous material is revised in short and the knowledge acquired by the pregnant woman in the first three lessons is checked.

Four lessons will be sufficient provided the pregnant woman has been given psychoprophylaxis during earlier prenatal visits to the maternity clinic. Otherwise five or six lessons are required to be taught. In order to complete the prenatal training of the pregnant woman she is recommended to repeat the exercises at
home on her own. The woman is informed about the regulations of the hospital where she is going to have her delivery. She is also informed of the manipulations that may be performed on her during labour such as

(i) external and vaginal examinations,

(ii) intravenous administrations of glucose,

(iii) breathing with oxygen etc. The pregnant woman is clearly instructed that she should follow instructions of the medical personnel. The necessity of taking food regularly is explained as well.

During visits of the health psychologist or any other member of the obstetric team, to the pregnant woman’s home, there can be a discussion on the information which the pregnant woman has acquired earlier during her visits to the maternity clinic.

The efficiency of psychoprophylaxis depends largely on the organization of the health education at a given hospital and the skill of the personnel. Their attitude to the pregnant woman should be quiet and benevolent. The personnel is prohibited to discuss possible complications of labour in the presence of parturient women. Inadequate behaviour of the medical personnel inconsiderate conversations, lack of care in their attitude to the parturient will reduce the effect of psychoprophylactic preparation of the woman for her labour.

The obstetrician conducting labour takes a constant watch on the parturient, encourages her, reminds her of the methods how to lessen and remove labour pain and tries to convince her that the outcome of labour will be successful. All the examinations of the parturient, the conduct of labour and other manipulations should be done calmly without undue fuss.

At the end of labour, the obstetrician evaluates the efficacy of psychoprophylaxis by taking into account.
the conduct of the woman during labour and
the report of the parturient on her subjective condition
and sensations.

The efficacy of psychoprophylaxis is thus assessed in the
following terms:

(1) complete effect
(2) partial effect and
(3) no effect.

If a pregnant woman has not received any instruction during
her prenatal visits she should be prepared for labour on admission
to the hospital. The preparation is done by relieving fear from the
mind of the pregnant woman and assuring successful outcome of
labour. The efficiency of pre labour talks is much lower than
prolonged psychoprophylactic treatment (Sowndaram and
Swaminathan, 1989). If the pregnant woman is not psychologically
prepared, she is quite likely to feel pain during labour. Most
women experience and express pain during labour and delivery;
but the degree of experience and expression of pain varies widely.
Many women feel strongest pain especially in the first and second
stages of labour (Kannamma and Swaminathan, 1990).

Dr. John Bonica’s significant contributions to the management
of acute and chronic pain in a strong conceptual framework, are
well known among health professionals throughout the world. He
developed a keen interest in obstetrical anaesthesia quite early in
his professional career after his wife encountered a near-disastrous
experience because of improper administration of ether anaesthesia
when their first child was born. After twenty years of experience
in the field of obstetrical anaesthesia, he wrote two volumes of
books entitled, “Principles and Practice of Obstetric Analgesia
and Anaesthesia. In this modern medical classic work, he has
addressed every aspect of childbirth with thoughtfulness and deep
insight (Bonica, 1967; 1969).
Bonica (1969) has consistently argued that labour is often extremely painful and severe prolonged pain can do considerable harm to women with cardiovascular problems and also to the foetus. Oxygen supply to the foetus may get affected adversely if delivery happens to be complicated.

A study by Melzack, Kinich, Doblin, Leuburn and Teanzer (1984) supports Bonica’s contention that many women suffer from severe pain at the time of labour. Melzack, Teanzer, Fiedmen and Kinich (1981) and Melzack, Wall and Ty (1982) questioned Lamaze’s (1970) contention that prepared childbirth training would abolish labour pain. But at the same time, the prepared childbirth movement has a valid point to convey to health professionals. Childbirth is quite often regarded as another medical issue by obstetricians and perhaps anesthetists as well. So childbirth becomes an appropriate occasion for administering maximum surgical and chemical intervention, forcing prospective parents to toe the line of obstetricians and anaesthetists in a situation which is basically an emotionally fulfilling, happy and memorable event. Lumley and Astburg (1980) point out that emphasis on pain control in the prepared childbirth movement obscures recognition of the psychological individuality of each mother and her unique anxieties, expectations, problems, needs etc. So it has become quite necessary now that obstetricians, and other health professionals should work together towards the main goal of ensuring physical safety and psychological fulfillment.

REFERENCES


