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Review Article

Diagnosis and the Risk of Pregnancy

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Abstract

Symptoms of pregnancy especially those earlier are not always easy to identify. There are some early symptoms that might lead to the conclusion that it is a pregnancy. The classic presentation of pregnancy in women with regular menstrual cycles is amenorrhea (absence of period), nausea, vomiting, general fatigue, and tension in the breasts.

There are no pregnant women the same symptoms in pregnancy, nor even the same symptoms as in the previous pregnancy. So, it can be said that each pregnancy is specific in its own way.

Pregnancy diagnosis is based on anamnestic data and an objective examination of the pregnant woman. There are changes in the body of women causing pregnancy. These changes are called pregnancy symptoms.

Keywords: *Pregnancy; Teen Pregnancy; Diagnosis*

Introduction

Most intending parents hope that the fetus they will bring to term will be born healthy [1]. There is nothing in this aspiration to cause concern. We simply want our children to have the best start in life, in the same way as we will try to maximise their opportunities throughout their lives. In the not too distant past, the capacity to influence the health of a future child was very much at the mercy of fate. Modern medicine, however, has been able to make a real contribution to the potential health of embryos and foetuses by warning women about risks during their pregnancy, encouraging healthy behaviour and discouraging dangerous practices.

Rapid advances have also been made in medicine's prenatal diagnostic skills. Testing the cells of the fetus is now a routine procedure in many pregnancies, and this allows prospective parents access to information as to whether or not their child suffers from a range of genetic and chromosomal disorders. Although treatment is seldom available following genetic diagnosis,the fact that a genetic problem has been established offers a woman the choice as to whether or not to continue with the pregnancy. Foetal monitoring can detect distress and mandate a change in the management of birth, and treatment within the womb - or even *in vitro* - designed to correct medical or surgical problems before the birth of the child may soon become commonplace. Despite criticism that pregnancy and childbirth are becoming overly medicalised,the fact is that the capacity to discover at least some aspects of the health status of future children has been a bonus for many people. Even so, the fact that such knowledge is available raises its own ethical concerns.

Wish to be parent

The deep longing many couples have for children provides a drive which, when it leads to the birth of a child, gives rise to understandable pride and outpourings of love [2]. This creation by parents, which brings with it the satisfaction of natural selfish ends, is also hugely important for society at large. Put simply, without that drive we would not survive. This is one reason why society is concerned about the creation of new life. It is, however, also concerned about the establishment of families and secular society has rules, which may well vary from country to country, about the circumstances and conditions by which people form the next generation. As the family is seen as the

key building block of civic society, which helps determine the shape of a particular society, there is a legitimate societal interest, not just in whether there are sufficient numbers of children, but also about the key unit, the family, in which they are cared for and loved.

Behind these secular rules, where matters of age, consanguinity and other factors are legislated for, there will be an ethical system. Dependent on the particular culture or cultures of a country, these will to a greater or lesser extent be influenced by religious beliefs, acting in both a historical and a contemporary context. Moreover, sometimes these beliefs may be in conflict with those of the particular state where the belief, and increasingly beliefs, are held and those holding these beliefs will, to varying degrees, both influence and be influenced by the secular rules of the state. Indeed, for many believers, it will be seen as their duty to do as much as possible to convince their host state of the rightness of their position and thereby influence legislation.

Prenatal diagnosis

Many family physicians assist pregnant women and deliver their infants as a routine part of their practice [3]. Many more family physicians provide prenatal care without assisting in the delivery. Practicing maternity care provides an opportunity to establish relationships with an entire family, developing lifelong continuity of care. It is also a time for initiating preventive care and adopting a healthier lifestyle by making better dietary choices, quitting smoking, and abstaining from alcohol. The goal of prenatal care is to promote the birth of a healthy baby while also promoting the health of the mother and minimizing risk to her.

There are several key components to prenatal care including the establishment of an accurate gestational age and estimated date of delivery, the initial assessment of maternal risk factors for the development of complications, the ongoing assessment of maternal and fetal health and well-being, and patient education. Pregnant women receive 13 - 15 office visits for a typical low-risk pregnancy when care begins in the first trimester. After her initial visit a woman will see her provider every 4 weeks until 28 weeks' gestation, and then every 2 weeks until 36 weeks' gestation, followed by weekly visits until delivery. Women at higher risk for complications, or those who develop complications in pregnancy, may be seen more frequently. Despite a general acceptance and widespread adoption of prenatal care, there is little evidence that demonstrates proven effectiveness in reducing maternal and fetal morbidity and mortality. Observational studies comparing women who receive prenatal care and those who do not are confounded by selection bias regarding socioeconomic status, maternal education, substance abuse and other factors that affect health and risk status.

As the demand to have a normal child and a normal pregnancy grows, the risk of litigation for an incorrect assessment grows [4]. For example, if a major congenital anomaly is not detected by ultrasound scan, does this constitute negligent practice? It would, undoubtedly, be considered negligent if a woman having a pregnancy at the age of 40 years was not advised of the need for prenatal screening for Down's syndrome, but it would be equally important to advise her of the risks associated with screening procedures such as amniocentesis or chorion villus biopsy and to record that such advice had been given.

Pregnancy

Reproduction will only be successful if a multitude of intricate sequences and interactions occur [5]. This reproductive process begins with the formation of individual male and female gametes. Following gamete formation, a mechanism must be provided to ensure that these gametes attain close proximity to each other so fertilization may take place. After successful fertilization, the newly formed embryo must develop correctly and finally implant in a nourishing environment.

The long-term implications for birth and the early postnatal period on maternal, fetal and neonatal health are evidenced within the literature [6]. Normal labour and birth can bring about psychobiological changes that promote physical and emotional health which is limited not only to the fetus/neonate and mother but also to the family unit and society. The understanding of some of the elements underlying these psychobiological perspectives of birth allows health professionals to embed these factors and values within their care.

Understanding the biophysical processes in labour is an important aspect of maintaining 'normality', even when the processes may be disturbed by medical events. An example would include an understanding of the mechanics of the birth and how more upright, forward positions (including kneeling) assist the birth process. This allows pelvic joints to increase in mobility creating wider pelvic diameters and enabling gravity to assist the pelvic floor and the fetus to negotiate the intra-pelvic turns necessary for effective birth. In addition upright positions have been reported to stimulate the release of oxytocin and cervical prostaglandins. It has been proposed that encouraging

women to mobilize and adopt upright positions in labour would be of value in reducing later interventions. This has been demonstrated to improve birth outcomes with reduced duration of first stage, less epidurals and fewer instrumental and caesarean births. It clearly is also associated with a sense of increased maternal control.

Effective protection against some infectious diseases for pregnant women and their children can be provided through immunization administered during pregnancy [7]. This means that vaccinations during pregnancy are an important aspect for both maternal and prenatal care, improving the health safety of neonates.

Despite the fact that protection against some infectious diseases for pregnant women can be easily provided through immunizations, current coverage rates are low. Two vaccines are notably recommended during pregnancy: influenza and the combined tetanus, diphtheria and acellular pertussis (Tdap) vaccine.

The mother's dietary intake prior to and during pregnancy is important and has significant bearing on the outcome of the pregnancy [8]. Conditions associated with poor nutrition during pregnancy include low-birthweight babies (< 2500g), neural tube defect, and iron-deficiency anemia, which can lead to developmental delays.

It is also important to ascertain the social and psychological history of the mother prior to pregnancy. Use of recreational drugs and alcohol can have deleterious effects on the fetus, resulting in retarded growth. Mothers who are depressed do not usually eat well and they tend to delay prenatal care.

Popular images of pregnant women are changing from women sitting down holding their growing abdomen to women running to keep fit during pregnancy [9]. In reality, only an estimated 40% of pregnant women take part in regular physical activity to maintain their health despite the obvious physical and mental health benefits reported for regular exercise. Physical exercise during pregnancy has been shown to have psychological benefits such as increasing self-esteem, mood, body image and decreasing anxiety and depression.

Regular physical activity during pregnancy benefits both maternal and infant health [10]. Regardless of the physiological changes women undergo during pregnancy, pregnant women benefit from physical activity just as much as nonpregnant women. The complexity of assessing physical activity during pregnancy hampers the determination of the optimal amount of recreational physical activity for pregnant women and has led to broad physical activity guidelines being proposed for pregnant women. Concurrently, pregnancy is characterised by a reduction in physical activity resulting in discrepancies between physical activity during pregnancy and the guidelines set by various institutional and governmental entities.

Modern information technology play very important role in area of pregnancy. Modern technological achievements anything can make it possible. Even birth control. For example, *SafeSex 101* was developed for students at the University of California, Los Angeles [11]. The app listed information on local resources and nearby health care providers and guided students on how to access birth control given the university's specific insurance plans. While these apps may provide a lot of relevant information, adolescents searching for these apps may assume that these apps do not apply to them simply because they are not part of the app's target demographic. Because of GPS (global positioning system), apps can provide global and local services based on the user's location. More apps are needed that follow best practices and include resources for national and even international audiences.

Teen pregnancy

The greatest risk for an adolescent mother and her child is the mother's age, delaying or failing to receive prenatal care, and the social and political response to her pregnancy [12]. These are critical issues in all countries, even in developed countries. Albeit, the reasons differ across countries as to why an adolescent was too young at her first birth and why she did not receive prenatal care; the negative birth outcomes are similar. In developed countries such as the United States, when pregnant teens are not using prenatal care, the reasons are not related to the lack of available prenatal services; the reasons are more associated with the adolescent's lack of knowledge, and the humiliation girls must deal with before receiving prenatal care. The numbers in the United States are astonishing. Some 85% of US teen pregnancies are unplanned, and 72% receive no prenatal care at all. This is an irrefutable crisis among US teen moms and their children; a

crisis that everyone acknowledges and agrees is a crisis. A crisis that everyone agrees requires a public response. There is also concurrence that the medical costs related to mothers who do not receive prenatal care far exceed the cost of providing prenatal care.

According to official data of World Health Organization, every year, an estimated 21 million girls aged 15 to 19 years, and 2 million girls aged under 15 years become pregnant in developing regions [13]. Approximately 16 million girls aged 15 to 19 years and 2.5 million girls under 16 years give birth each year in developing regions. Complications during pregnancy and childbirth are the leading cause of death for 15 to 19 year-old girls globally. Every year, some 3.9 million girls aged 15 to 19 years undergo unsafe abortions. Adolescent mothers (ages 10 to 19 years) face higher risks of eclampsia, puerperal endometritis, and systemic infections than women aged 20 to 24 years, and babies born to adolescent mothers face higher risks of low birth weight, preterm delivery, and severe neonatal conditions than those born to women aged 20 to 24 years.

Statistical trends play a vital role in attracting public attention to social problems [14]. When they rise, we become concerned. When they go down, as is the case with adolescent pregnancy and childbirth, we move on to another problem that is rising. In so doing, social problems seldom are effectively addressed. Amore realistic approach is to attend to all of our social problems, especially those that affect family relationships, and use rates to assess progress.

The obstetrical teen clinic and family planning and outreach services at a large urban hospital and the teen mother clinic at a children's hospital provide comprehensive care and supplemental services to adolescents at risk of unintended pregnancies, pregnant adolescents, and adolescent parents and continued academic and vocation education, which are referral linkages predominantly with the academic and vocational public schools [15]. Compared with adolescents who have not attended the obstetrical teen clinic, adolescents who have attended the teen clinic have a greater return rate to school and have an increased interval between the first and second pregnancy. Each girl receives close monitoring of her physical, educational, and social patterns in order to decrease maternal and fetal infant morbidity and mortality, and to improve nurturing patterns and her educational forecast. Observations also indicate that more teenagers who received individual counseling and support during pregnancy accepted contraception after delivery better than teenagers who had routine obstetrical care.

An appointment can be made at the regular obstetrical clinic by anyone who believes herself to be pregnant. The patient is interviewed for financial assessment and is referred for maternal infant care or referred to Medical Assistance for prenatal and hospital coverage if appropriate.

On the first visit, the patient is medically screened by the staff nurses, physician, and nurse midwife. At this time, a pregnancy test is done. Upon complete physical examination, including a pelvic examination, a gonococcal culture, Papanicolaou smear, and blood samples for VDRL (syphilis examination), complete blood count, blood type, Rh, and sickle preparation, are taken where applicable. If medical evaluation is needed by other specialists, an appointment is made for the patient. This is noted on the patient's chart, and a consultation sheet is returned when the patient has been evaluated. A patient may be referred for consultation at any time during pregnancy, and the above procedure is initiated. On the initial visit, the nurse explains the clinic procedures and basic comfort measures for pregnancy, answers questions, and provides the patient with reading materials, which are usually supplied by drug companies.

A lack of educational opportunities and poor understanding of both danger signs and possible complications indicate that many women may not be familiar with the presentation of complications and consider them normal appearances in pregnancy [16]. Delay in seeking appropriate healthcare owing to lack of knowledge of danger signs can be reduced by improving access to health information and education through the development of community outreach projects that specifically provide information on childbearing issues particularly danger signs for obstetric complications. Such information should be given to individual women and their families to facilitate their collaboration when care is needed. The establishment of community-based programs is also of particular importance to assist women with limited ability to visit health facilities. It will also be beneficial if other members of the community receive education and eventually provide a community support group that will offer help when a complication occurs. Importantly, the quality of health education at the health facility should be carefully checked for relevance and usability.

Pregnant nulliparous adolescents are at increased risk, inversely proportional to their age, of major obstetric syndromes, including preeclampsia, fetal growth restriction, and preterm birth [17]. Emerging evidence indicates that biological immaturity of the uterus accounts for the increased incidence of obstetrical disorders in very young mothers, possibly compounded by sociodemographic factors associated with teenage pregnancy. The endometrium in most newborns is intrinsically resistant to progesterone signaling, and the rate of transition to a fully responsive tissue likely determine spregnanc youtcome during adolescence. In addition to ontogenetic progesterone resistance, other factors appear important for the transition of the immature uterus to a functional organ, including estrogen-dependent growth and tissue-specific conditioning of uterine natural killer cells, which plays a critical role in vascular adaptation during pregnancy. The perivascular space around the spiral arteries is rich in endometrial mesenchymal stem-like cells, and dynamic changes in this niche are essential to accommodate endovascular trophoblast invasion and deep placentation.

From the biological point of view, among the consequences of pregnancy in adolescence are the high rates of hypertensive disorders of pregnancy, anemia, gestational diabetes, delivery complications, determining an increase in maternal and fetal mortality [18]. It is important to note that some studies showed an increased trend of prenatal, intrapartum, and postpartum intercurrent events among pregnant adolescents.

As to problems with the newborn, gestation during adolescence is associated with higher rates of low birth weight (LBW), preterm delivery, respiratory diseases, and birth trauma, besides a higher frequency of neonatal complications and infant mortality.

Midwifery

Midwifery care has always included a public health component, although the public health role is more apparent in community-based care [19]. Provision of information around such topics as breastfeeding and women's health is recognizably part of the health promotion role of the midwife. As a profession midwifery acknowledges childbirth as a psychological and social event rather than a purely clinical event and that optimum outcomes are the result of individual, community and organizational effort. In essence midwives have understood that childbirth and raising a family are more than just a medical event and that the outcomes depend on the mother and the family's social and psychological circumstances as much as on the input of health professionals.

The contextual nature of childbirth has often been at odds with the organization of midwifery care within acute trusts. This has resulted in a tension between midwifery care in hospitals (which emphasizes acute interventions) and midwifery care that is community based (dealing with the larger public health agenda through giving care rooted in women and their families' everyday lives). This has led to much of the public health role of midwives beyond mere information and advice giving being tacit and unacknowledged.

Scope of practice and the boundaries of the midwife's position, together with the degree of autonomy, will all play a part, along with some degree of dependency on the midwife's line manager, e.g. the setting up of a breastfeeding workshop or a teenage mothers' parenting group may be considered by the line manager as a health promotion activity for a midwife, but becoming involved in educational work around sexual health within local schools may, sadly, not be [19]. Another consideration must look at whether the need being assessed is reactive - responding to an expressed need - or proactive - where the midwife initiates the need.

A midwife can be accountable in many of the areas we have looked at [20]. In addition, there are further rules that apply specifically to midwives. These rules have been set down together with a code of practice by the NMC. All midwives should be familiar with these rules and the code of practice.

The law relating to midwives makes it clear that it is an offence for a person, other than a midwife or doctor, to attend a woman in childbirth, except in an emergency or in supported recognised training. A person who contravenes this is committing a criminal offence.

Common problems encountered by midwives include, for instance, issues of consent, such as when the patient does not want a midwife present at the birth. Or when the patient does not wish to have pain relief and then during labour changes their mind. In this case does the patient have capacity to change their mind? If the patient refuses a caesarean section and such refusal is likely to result in the death of the unborn child, would the midwife have an obligation to save the unborn child regardless of the patient's consent? The law relating to consent has the effect that you cannot compel the patient to undergo treatment if they are a competent adult.

Consent is a complicated area and all midwives should be familiar with it.

Some patients are keen not to receive antenatal care during pregnancy and wish to have a home birth without the assistance of a midwife. The patient can refuse treatment provided they are a competent adult. There is no action that can be taken to prevent this even if it is not clinically desirable.

Midwives should have regard to this when being assisted by those who are not qualified and are under the direction or personal supervision of a duly qualified midwife. The difficulty here is in ensuring that the midwife is aware when the baby is imminent.

Another issue of consent concerning midwives is where a patient refuses a caesarean section, which may result in her own death or that of her unborn child. If the patient is a competent adult there is little the midwife can do.

Birth

The most significant change in twentieth-century maternity care was the movement of the place of birth from the home to large hospitals [21]. At the beginning of the last century virtually all births occurred at home; by the end of the century almost every woman who gave birth in an industrialized country (with the odd exception of the Netherlands) did so in a hospital. All the other major trends in maternity care-the changing status and role of midwives, the increasing use of technological interventions, the developments in maternity care policy, the redefinition of birth-are intimately related to this move from home to hospital. But the most interesting thing about this change in maternity care is that the end result-the (nearly) complete move of birth to the hospital-was achieved in a number of different ways.

Why should it matter where a baby is born? Simply stated, the place of birth shapes the experience, determining who is in control and the technologies to be employed. In a home birth, those attending are visitors in the family's domain, and midwives and doctors must rely on the family for an understanding of local customs and practices. The reverse is true for a mother in a hospital. In a hospital birth a mother is placed in a dependent condition reinforced by the use of unfamiliar language and machinery. The place of birth also determines the way care is organized. Birth at home is patterned around the values of the family. In hospitals-where hundreds, or even thousands, of births occur each year-birth is a routine event, accomplished with speed and efficiency.

The hospitalization of birth encourages the use of technologies that can only feasibly be applied in a hospital. As the twentieth century progressed, hospitals became centers where new technologies could be easily tested and then applied to large numbers of women. The concentration of women in one place made the training and staffing needed to maintain the technologies clinically safer and economically feasible; the presence of the latest scientific technologies (e.g. fetal monitors and epidural anesthesia) in hospitals served to enhance their prestige as centers of science.

As one would expect intuitively, midwifery-led care of low-risk women is cheap with clear reductions in consumables [22]. It is likely that the imperative to provide one-to-one care in labour will drive alternative service provision as this is always more complex to address in large maternity hospitals. What is emerging in the western world is the rationalisation of perinatal services by the creation of tertiary centres of excellence forming a hub for local midwifery-led units or birth centre and home birth. This model is likely to increase the numbers of birth centres and midwifery-led units and will be welcomed by service users and midwives.

This will contribute positively to addressing the trend to increasing medicalisation of birth but this phenomenon is fed by a number of powerful discourses including the techno-rationalist age, risk and professional power. Techno-rationalism proffers that science is progressive and altruistic, and holds an optimistic view of technology. It is challenging for an anthropological approach to childbirth to have credibility, competing for women's hearts and minds, when up against such a ubiquitous and pervasive alternative. In what other context of our lives would we embrace pain as part of 'rites of passage' transition? In what other context would we reject the use of technology in favour of traditional skills? This is why preserving the anthropological alternative in out-of-hospital birth settings is so crucial. It is unlikely that these frontiers will everbe rolled backin hospital where professional vested interest in maintaining them is strong. In the hospital context, technologies application in treating pathology is appropriate and beneficial but in childbirth its attendant iatrogenic effects have undermined this intent. In addition, the integration of technologies with labour care in the context of institutional hospitals has tended to dehumanise the birth experience.

Sensitivity to the user voice in maternity care is also driving reform, especially around choice and options for birth. As in broader health, the rise and rise of what are now called 'experts by experience', is requiring service providers to move beyond tokenism in user consultation to planning services and evaluations with them. This is beginning to challenge professional and managerial power as a number of stories of resisting closures of birth centres illustrate.

Conclusion

Early signs and symptoms of pregnancy are often similar to what happens before and during the period, so the symptoms are not easy to recognize. It is necessary to know that such symptoms may be caused by other conditions than pregnancy. If these symptoms occur, does not necessarily mean that a woman is pregnant.

Pregnancy diagnosis requires multiple access including anamnesis, physical examination, laboratory processing, and ultrasound examination. Currently, doctors use all these methods to diagnose pregnancy in early gestation and at the same time exclude any pathology.

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