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Evaluation of Cervix Condition According to Bishop Score in Post Term Pregnancy

Ocena stanu szyjki macicy według skali Bishopa w ciąży po terminie porodu

Оценка состояния шейки матки по шкале Bishopa после планового срока родов
при перенесенной беременности

Antepartal changes in cervix, comprised by term maturation, as: softening, shortening and turning vaginal section to delivery canal plane take place in the course of last days or weeks of pregnancy. They are not only the indicator of approaching delivery, but may also be important in prognosis of its course, as the more susceptible cervix is, the quicker the advance of its opening in the first stage of delivery (4, 9, 13), although opinions of scholars differ.

Evaluation of cervix conditions in women with prolonged pregnancy is considered to be quite important (4), and its changes are regarded one of the most sensitive indicators of approaching delivery by the reason that other diagnostic methods as cytohormonal smears examinations, Smyth test and determination of oxytocinase activity (10, 6, 7) are, on the one hand, not always accessible, and on the other not always give reliable results (6).

The present study constitutes an attempt at evaluation of the usefulness of cervix condition evaluation, according to clinical point score established by Bishop (1), in women after post term pregnancy for determination of its term or, in justifiable cases, expediency of pharmacological induction.

MATERIAL AND METHODS

86 pregnant women, patients of the Institute of Obstetrics and Gynecology, Medical Academy in Lublin, Poland, were examined on, and after the term of delivery. Age of the examined women varied from 19 to 42 years, and on average it was 26 years. Among the examined women were 49 primigravidas and 37 multiparas. 64 out of these pregnant women came from cities, and 22 from villages.

The examined women were divided into two groups. The criterion for the division was delivery term, determined according to Naegelli rule; length of menstrual cycle, first movements of fetus and the moment of uterus fundus lowering, considered.

The first group consisted of 31 patients with delivery on term, whose average period of pregnancy was 280 days and varied from 269 to 291 days. All these patients had spontaneous delivery.

The second group consisted of 55 women with a prolonged pregnancy. Average pregnancy period in this group was 303 days, and varied from 295 to 326 days. Moreover, within this group of women, two subgroups were distinguished according to the course of delivery:

Ist subgroup — spontaneous delivery;

IInd group — patients qualified for cesarotomy or pharmacological delivery induction.

In these groups only those women were included, whose period of observation from the day of arrival in the clinic to the beginning of labour was at least 4 days.

For cervix condition evaluation the pelvic point score, established by Bishop was used (1). Basing on internal and external obstetrics examination, each time the following items were evaluated:

Opening cervical canal (cm)	0	1—2	3—4	5—6
points	1	1	2	3
Percentage of cervix shortening	0—30	40—50	50—70	80
points	0	1	2	3
Presenting part position	—3	—2	—1	+1 +2
points	0	1	2	3
Cervix consistency	dense	medium		soft
points	0	1		2
Cervix position in delivery canal	backward	middle		forward
points	0	1		2

In each case the parameters were evaluated separately, and the sum of the points (0—11) constituted the basis for general evaluation. It was accepted for uterus to be ready for pains of labour or odynopoeia, when pelvic factor according to Bishop was 9 or more points.

Each patient underwent examination within first 24 hrs of her stay in the clinic, and then examinations were repeated in two days' intervals till delivery. The results obtained in the first 24 hrs examinations and those in the last 24 hrs before delivery, were analyzed and statistically described according to Student's *t* test (8).

RESULTS

Results of the statistical analysis are given in Table 1 and illustrated graphically in Fig. 1.

On the basis of total results analyzed it was determined that median value for cervix condition according to Bishops' score was 6 points on the day of arrival to the clinic and 9 points in the last 24 hrs before delivery.

On the day of admission to the clinic in all the patients of the 1st group the value of pelvic score was higher than median. Out of 55 women with prolonged pregnancy (2nd group), only in 36 the value of Bishop's score turned out to be higher than median. Statistical analysis proved that, on the first day of stay at the clinic, higher Bishop's pelvic score values were considerably rarer in the group of women with prolonged pregnancy, than in that of women with delivery at term ($X^2 = 13.744$, $p < 0.001$). On the day of arrival to the clinic no essential differences in values obtained in two differentiated subgroups in the group of women with prolonged pregnancy according to the way of delivery, were observed (Table 1).

On the day of delivery, in all the patients of the 1st group the value of Bishop's pelvic score was equal or higher than median. A more complex situation was observed on the day of delivery in patients with prolonged pregnancy (group II). Out of 24 women with spontaneous

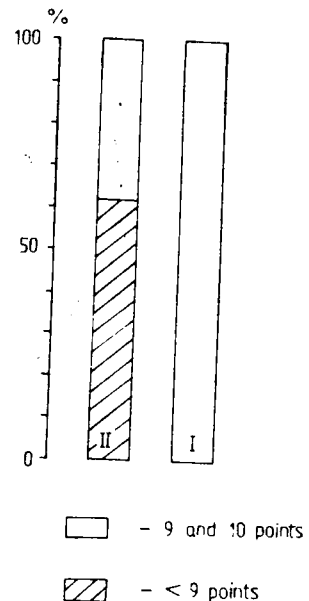


Fig. 1. The results of Bishop score obtained from the examined groups (I — first and II — second group)

Table 1. Statistical analysis of Bishop score in investigated groups of patients

Bishop score	Media	Kind of delivery		Me		n	Me		χ ²	p
		Abreva- tion	Days post term	f	%		f	%		
After admittance	9	Stimulated and operative together	PZ	15-40	13	41.9	18	58.1	1.76	>0.15
		Spontaneous	PS	15-46	6	25.0	18	87.0		
		Post-term	Pt	15-46	19	34.5	36	65.5	13.746	<0.001
		Spontaneous	SK	At term	0	0	31	100		
Before delivery	6	Stimulated	PK	15-43	6	42.9	8	57.1	3.656	≈0.07
		Operative	PO	15-40	13	76.5	4	23.5		
		Stimulated and operative together	PZ	15-40	19	61.3	12	38.7	19.08	<0.001
		Spontaneous	PS	15-46	1	4.2	23	95.8		
Spontaneous	SK	At term	0	0	31	100				

delivery only in 1 (2.4%) the value of pelvic score was lower than median and in other 23 (97.6%) equal or higher (Subgroup I). On the other hand, among 31 women qualified for cesarotomy or pharmacological delivery induction in 12 (38.7%) point evaluation according to Bishop's score appeared equal or higher than median, and in the remaining 61.3% of cases — lower. Statistical analysis performed proved that in the group of women with prolonged pregnancy a low-point evaluation of cervix condition according to Bishop's score was essentially more frequent in those qualified for cesarotomy or pharmacological induction of delivery (Subgroup II), than in women with spontaneous delivery (Subgroup I) — $X^2=19.08$, $p<0.001$ — (Table 1).

On the other hand, low values of the examined parameter were more frequent in the group of patients with prolonged pregnancy qualified for cesarotomy, than in the group of women who underwent pharmacological delivery induction. The above difference was at the border of statistical significance — $X^2=3.656$, $p\approx 0.07$ (Table 1).

DISCUSSION OF RESULTS

The obtained values of pelvic point scale established by Bishop for evaluation of cervix condition (1) in all women with delivery at term, and in 36 women (65.5%) with prolonged pregnancy, on the day of their arrival to the clinic were higher than median, and performed statistical analysis proved that in the group of women with prolonged pregnancy, essentially lower values of the discussed parameter are found in comparison to values obtained in the group of women with delivery on term ($p<0.01$). In last 24 hrs before delivery values higher than median were much more frequently observed in the 1st group and in those women with prolonged pregnancy, who delivered spontaneously (Subgroup I). Whereas only in 12 (38.7%) patients with prolonged pregnancy qualified for cesarotomy or delivery induction (Subgroup II) the value of pelvic score was higher than 8 points, which makes a highly essential difference to values obtained in Subgroup II — ($p<0.001$). In these cases, regardless of the state of genital organ preparation for either spontaneous or induced delivery, there were indications for surgical procedure.

On account of simplicity of performance and objective point system, Bishop's pelvic score (1, 5) has continuously broader application. As confirmed by the present study, it makes a comparably sensitive indicator for determination of the term of occurrence of the pains of labour and also makes it possible to decide upon pharmacological delivery induction.

She-Ya and Read (11), Bishop (1) and Burnett (2) re-

commend delivery induction in case of prolonged pregnancy in case the result of the discussed examination is 9 and more points. Other authors claim that delivery induction may be performed at pelvic score value of 8 points, but it carries certain obstetric hazard.

Many authors are of opinion that only simultaneous employment of various methods (cytohormonal smears examinations, Smyth test, determination of oxytocin-oxytocinase activity) gives the possibility to determine delivery term properly (2, 6, 10).

The present study confirms suggestion of the authors who regard the Bishop's evaluation of cervix condition as having a great clinical importance and being useful for making a proper choice of direction especially in cases of prolonged pregnancy (1, 2).

Despite the fact that classical examination of cervix condition before delivery has all the time many advocates (4, 9, 13) evaluation of cervix condition included in the pelvic score according to Bishop is an examination of greater prognostic importance.

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STRESZCZENIE

Badania przeprowadzono u 86 ciężarnych pacjentek Instytutu Położnictwa i Chorób Kobietych AM w Lublinie, w wieku 19—42 lat, średnio — 26 lat. Badane kobiety podzielono na 2 grupy: grupę I stanowiło 31 pacjentek w terminie porodu, u których przeciętny czas trwania ciąży wynosił 289 dni, zaś grupę II — 55 kobiet z ciążą przeterminowaną (przeciętny czas jej trwania 305 dni). Kryterium podziału stanowił termin porodu ustalony w oparciu o regułę Naegellego z uwzględnieniem długości cykli miesięczkowych, pierwszych ruchów płodu oraz momentu obniżenia dna macicy. Dla oceny stanu szyjki macicy posłużono się skalą miedniczną opracowaną przez Bishopa. Uzyskane wyniki obserwacji i badań poddano analizie statystycznej według testu *t* Studenta.

Przeprowadzona analiza wykazała, że w grupie kobiet z ciążą przeterminowaną istotnie częściej obserwowano niskopunktową ocenę stanu szyjki macicy według Bishopa u tych, które następnie kwalifikowano do cięcia cesarskiego lub farmakologicznej stymulacji porodu, niż u kobiet rodzących samoistnie. Z kolei częściej (na pograniczu statystycznej istotności) obserwowano niskie wartości badanego parametru w grupie pacjentek z ciążą przeterminowaną kwalifikowanych do cięcia cesarskiego niż w grupie kobiet, u których zastosowano farmakologiczną stymulację porodu.

Obserwacje własne wskazują, że ocena stanu szyjki macicy według skali Bishopa jest czułym wskaźnikiem stopnia przygotowania narządu rodnego do podjęcia samoistnej bądź stymulowanej akcji porodowej.

РЕЗЮМЕ

Обследовалось 86 беременных женщин, пациенток Института Акушерства и Гинекологии, Медицинской Академии в г. Люблине, в возрасте 19—42 лет, средний возраст 26 лет. Обследуемые женщины были поделены на две группы: в первой группе обследовалась 31 пациентка во время родов, у которых средняя продолжительность беременности равнялась 280 дням, а во второй группе — 55 женщин с переношенной беременностью (средняя ее продолжительность — 305 дням). Критерием этих групп был срок родов установленный по правилу Негелля, с учетом длительности менструальных циклов, первых шевелений плода, и от момента опущения dna матки. Для определения состояния шейки матки пользовались тазовой шкалой разработанной Bishop. Полученные результаты наблюдений и обследований были статистически анализированы по тесту *t* Студента.

Проведенный анализ показал, что в группе женщин с переношенной беременностью значительно чаще наблюдалась низкопунктная оценка состояния шейки матки по Bishop, у тех, которых квалифицировано на кесарево сечение или фармакологическую стимуляцию родов, чем у женщин с самопроизвольными родами. В свою очередь, чаще (на границе статистической подлинности) наблюдались низкие величины обследуемого параметра в группе пациенток с переношенной беременностью квалифицированных на кесарево сечение, чем в группе женщин у которых применялось фармакологическое стимулирование родов.

Наши наблюдения указывают на то, что оценка состояния шейки матки по шкале Bishop является чувствительным показателем степени подготовленности родовых путей к самопроизвольным или стимулированным родам.

