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RESEARCH ARTICLE

THE EFFECT OF APPLYING QUILL SUTURE IN PERINEAL WOUND OF PARTURIENT WOMEN.

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Key words:-
Perineal cosmetic suture; Quill suture; Perineal wound.

Abstract

Objective: To explore the application effect of Quill suture in perineal wound of puerpera.
Methods: A total of 110 parturients who wish to give birth naturally from January 2018 to August 2019 were randomly divided into two groups, including observation group (case = 55) and control group (case = 55). In the observation group, 55 parturients who underwent lateral perineal incision and laceration were treated with Quill suture for cosmetic perineal suture; in the control group, 55 parturients who underwent lateral perineal incision and laceration were treated with 2-0 absorbable micro-arbor suture for routine suture.
Results: The VAS scores of the observation group at 24 and 48 hours after lateral perineal incision and laceration suture were significantly lower than those of the control group, with statistical significance $P < 0.05$. The healing time of incision in the observation group was significantly shorter than that in the control group, and the difference was statistically significant ($P < 0.05$). The healing rate of incision grade A in the observation group was significantly higher than that in the control group, and the difference was statistically significant ($P < 0.05$). The incision inflammatory reaction rates of the observation group and the control group were (2.22%) and (13.16%) respectively, with statistical significance $P < 0.05$.
Conclusion: Quill suture can effectively relieve the pain of puerpera after lateral perineal incision and laceration suture, improve wound healing and reduce the incidence of wound inflammatory reaction. It has high clinical application value.

Introduction:-

Natural childbirth is an important physiological process of human reproduction. With the development of society and the change of medical environment, maternal physiological and psychological needs are getting higher and higher. Due to individual differences, lateral perineal incision or perineal laceration are inevitable. The suture methods of perineal area tend to be diversified, such as full-thickness discontinuous silk suture, stratified suture and intradermal cosmetic suture. When the perineal wound is sutured, different sutures will have different effects on the bleeding around the incision and the pain of the suture after operation [2]. Therefore, the choice of fast wound healing, maternal pain is the ultimate goal of midwives, compared with the traditional perineal suture perineal, the intradermal cosmetic suture has more clinical value, it effectively improves the healing effect, reduce the incidence of incision complications [3]. Intradermal cosmetic suture can shorten the suture time, small margin gap, tight fit,

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completely repaired by epithelial tissue, beautiful incision, small scar, can alleviate the suture pull effect, reduce maternal pain, shorten the hospital stay after surgery. [4] In order to achieve this goal, our department used Quill suture for perineal cosmetic suture, and achieved good results.

Materials and Methods:-

General information

A total of 110 parturients delivered in obstetrics department of our hospital from January 2018 to August 2019 were randomly divided into two groups, including observation group (case = 55) and control group (case = 55). The average age of 55 parturients in the observation group was (27.5 +2.2) years, ranging from 22 to 38 years. The average age of 55 parturients in the control group was (28.3 +1.8) years, ranging from 20 to 39 years. Statistical analysis of the sociological and clinical data of the two groups showed no significant difference between the two groups ($P > 0.05$), which met the requirements of the control trial. This study has been approved by the Medical Ethics Committee.

Inclusion criteria

The parturients without contraindication of vaginal delivery, and all of them are single-fetus head position; 2) the parturients with natural childbirth intention; 3) the parturients who can independently understand the content of this study, and agree to participate in it, and sign the consent form of admission; 4) the parturients with good compliance to clinical research.

Exclusion Criteria

(1) parturients with indications of cesarean section; (2) parturients with disproportionate cephalopelvic and abnormal pelvis; (3) parturients with gestational complications such as diabetes mellitus and hypertension; and (4) parturients with history of mental disorders, severe psychological disorders or other reasons unable to communicate normally.

Clinical methods

The observation group used Quill suture to make cosmetic suture for puerpera with lateral episiotomy and laceration. Even with 4-0 Quill suture, the two-way zigzag suture without knotting could be absorbed. The vaginal mucosa and submucosal tissue were sutured by continuous suture, and then sutured to the inside of hymen without knotting. From the lateral hymen obliquely to the opposite side of the wound, the subcutaneous fat layer is 0.5 cm away from the skin edge, without cutting the suture, then suture the muscular layer and subcutaneous tissue, suture continuously until the top of the wound, without knotting. Then suture the skin with 4-0 Quill suture absorbable suture, insert needles from the inner edge of the wound to 0.2-0.3 cm below the skin, and then intersect the skin with the subcutaneous fat layer. Needle insertion and needle discharge at the boundary were performed with 0.2-0.3 cm needle spacing for subcutaneous alternate intradermal suture. During the suture process, attention should be paid to aligning the needle entry and exit points of each needle, suturing tightly and appropriately, and finally a knot was made at the orifice of hymen. In the control group, 2-0 absorbable micro-arbor suture was used for routine suture of puerpera with lateral perineal incision and laceration. First, 2-0 absorbable micro-arbor suture was used to suture vaginal mucosa, subcutaneous tissue and muscular layer by intermittent suture, and then 2-0 absorbable micro-arbor suture was used for skin mattress suture.

Statistical Processing

The data were processed by SPSS 21.0. The data of wound healing effect and incidence of inflammatory reaction were expressed by (+) and compared by t test. The data of pain degree and wound healing time at 24h and 48h after perineal wound suture were expressed by (%) and compared by X_test. $P < 0.05$, with statistical significance.

Results:-

Comparison of pain after perineal wound suture between two groups

Of the 55 parturients in the observation group, 50 were spontaneous delivery, of which 5 underwent lateral perineal excision and 5 had complete perineal area. In the control group, 42 had spontaneous delivery, of which 6 underwent lateral perineal excision and 4 had complete perineal area. The VAS score of the observation group at 24h and 48h after perineal wound suture was better than that of the control group, and the difference was statistically significant ($P < 0.05$). See Table 1:

Table 1:-Comparison of pain degree after perineal wound suture between two groups (, points)

Group	24 hours after perineal wound suture	48 hours after perineal wound suture
Observation group（n=45）	4.25±1.25	3.06±0.76
Control group（n=38）	5.12±1.56	4.86±0.84
t	4.692	4.925
P	<0.05	<0.05

Wound healing of parturients in two groups

The wound healing time of the observation group was faster than that of the control group, and the difference was statistically significant (P < 0.05). The wound healing rate of the observation group was higher than that of the control group (P < 0.05). See Table 4:

Table 2:-Wound healing of parturients in two groups

Group	Wound healing time（d）	Wound healing effect		
		Class A	Class B	Class C
Observation group（n=45)	3.53±1.22	43（95.56）	2（4.44）	0
Control group（n=38）	4.36±1.52	32（84.21）	5（13.16）	1（2.63）
t/X^2	6.856		**7.852**	
P	<0.05		<0.05	

Comparison of incidences of wound inflammatory reaction between two groups

The incidence of wound inflammatory reaction in the observation group (2.22%) was significantly lower than that in the control group (13.16%). The difference was statistically significant (P < 0.05). See Table 5:

Table 3:-Comparison of incidences of wound inflammatory reaction between two groups

Group	Redness and swelling	Scleroma	Exudation	Infection	Total incidence
Observation group（n=45）	0	1	0	0	1（2.22）
Control group（n=38)	1	2	2	0	4（13.16）
X^2					**14.906**
P					<0.05

Discussion:-

In Fanqiong's study [5], 104 parturients in the control group and 104 parturients in the research group were subcutaneously sutured with 3-0# absorbable suture and 5-0 absorbable two-way zigzag suture (Quill). The results showed that the parturients in the study group were sutured for 6h, 24h, 48h and 48h after the operation of lateral perineal incision. The 72-hour pain score was significantly lower than that of the control group (P < 0.05). On the 3rd, 7th and 14th day after operation, the 0-degree rate of the ligation reaction in the study group was significantly higher than that in the control group, and the 3-degree rate of the ligation reaction in the study group was significantly lower than that in the control group (P < 0.05). The incision healing time and complication rate of the study group were lower than those of the control group, and the aesthetic satisfaction rate of incision suture was significantly higher than that of the control group (P < 0.05). This result is consistent with this study. Quill suture was used to suture puerpera with perineal wound in this study, and remarkable application effect was obtained. Quill suture is a kind of absorbable knot-free two-way zigzag suture made in the United States. It has tiny barbs on its surface and is arranged in opposite directions at both ends of the suture. The center end of the suture is smooth. During the suture process, the suture enters the tissues along the direction of the barbed needle. With the opening of the barbed needle at the other end, it is embedded into the surrounding tissues to form self-anchorage. Therefore, no knotting is needed, which can alleviate the blood circulation impairment caused by the knotting and the stress response of the incision [6-7].

Conclusion:-

In conclusion, Quill suture combined with lateral perineal incision and laceration can effectively relieve the pain of perineal wound after suture, improve wound healing and reduce the incidence of inflammatory reaction. It has high clinical application value.

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