THE EFFECT OF DIETHYLSTILBENEDIOL ON THE HEALING OF WOUNDS IN THE HUMAN VAGINA

By

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Every obstetrician has the opportunity of observing the usually rapid and uncomplicated healing of perineal ruptures and episiotomies in women soon after delivery. It seems natural to assume that this rapid healing is due to more favourable conditions for healing created by hormonal influence. If this is so it may be due to an effect of the placental hormones persisting during the puerperium leading, among other things, to an increased blood supply.

Both in animal experiments and clinically it has been shown that oestrogens exert a favourable influence on the healing of wounds (for bibliography vide Sjövall, 1953). By the administration of oestrogen an increased vascularization of the genitalia is obtained. The increased blood supply can, inter alia, be registered by the increased temperature of the mucous membrane (Kohnert, 1940). Further, the metabolism in the vaginal mucous membrane and vaginal musculature increases (Bengtsson). By acidification of the secretion in the vagina a pH is obtained at which ordinary pathogenic bacteria do not thrive and in this way the risk of wound infections is probably reduced.

OWN INVESTIGATIONS

The object of the investigation was to ascertain whether it is possible to achieve better healing of wounds in vaginal operations by the administration of oestrogens. For the experimental series, patients were chosen who were operated on for prolapse of the uterus, thus ensuring that the patients' wounds were relatively similar.

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Material

The material comprises 203 women operated on for prolapse of the uterus. Of these, 154 were at the menopause and the remainder, 49 cases, in the fertile years. All the patients were treated in the same gynaecological department under uniform conditions, and those who received oestrogen were chosen at random according to the serial numbers of the case histories.

Treatment

Except for the treatment with oestrogens all the patients were treated uniformly. They were admitted to hospital 2 to 8 days prior to operation depending on such preliminary investigations and treatment as were considered necessary. During this period as well as during the subsequent stay in hospital (as a rule approximately 12 days) the oestrogen treated patients received 3–5 mg. diethylstilbenediol (stilboestrol) orally every 24 hours. In a few patients, however, the treatment had to be discontinued on account of nausea. No local treatment of the vagina in the form of douches etc. was employed.

Evaluation

The patients were examined 10–12 days after operation. On this occasion the healing of the repairs were recorded. Wounds, not completely epithelialized macroscopically, were classified as not healed. The evaluation was carried out blindly, in so far as the evaluator did not know in advance whether the patient had received stilboestrol or not.

Result

The result of the investigation is summarized in the table. As is apparent, no tangible effect on the healing of the wound is exerted by the administration of stilboestrol in the fertile years. In women at the menopause, however, administration of stilboestrol distinctly promotes healing.

In addition to the results stated numerically in the table, other observations were made. If a woman at the menopause is treated with stilboestrol, distinct signs of increased circulation are most often seen in so far as the mucous membranes in the vulva and vagina become softer, more moist and red. In addition, the secretion from the wounds in the vagina becomes, as a rule, quite clear and not evil smelling and purulent as is frequently the case in untreated patients.

<table>
<thead>
<tr>
<th></th>
<th>Untreated</th>
<th>Treated with stilboestrol</th>
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<tbody>
<tr>
<td></td>
<td>Healed</td>
<td>Not healed</td>
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<tr>
<td>At menopause</td>
<td>45</td>
<td>46</td>
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<tr>
<td>In fertile age</td>
<td>23</td>
<td>9</td>
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DISCUSSION

Investigation of the influence of stilboestrol on the healing of wounds should in the first instance be directed towards the healing of wounds in the female genitalia, as these, under normal conditions, respond in a specific way to the influence of this hormone. If, moreover, women both in the fertile age and at the menopause are chosen for investigation, the effect may be illustrated relatively comprehensively.

Comparing the two normal series in the table (healing of wounds without administration of stilboestrol), it is found that the conditions for healing are distinctly inferior at the menopause than in the fertile age. In the fertile age approximately 70 per cent heal in 10–12 days while at the menopause only approximately 50 per cent heal. This difference may, inter alia, be due to the fact that the women in the former group are younger and thus conditions are better for healing, and that these women show a higher output of ovarian hormones. On administration of 3–5 mg. stilboestrol daily to women of fertile age no effect on the healing of the wounds in this small series could be observed. (This result differs from those obtained by Løvset (1948), who improved the healing of wounds considerably in women in the fertile age by the administration of oestrogen). At the menopause, on the other hand, administration of stilboestrol considerably improved the healing of the wounds. Instead of 50 per cent, nearly 80 per cent healed in 10–12 days, a figure which corresponds approximately to the percentage of wound healing in the fertile age. Thus treatment with stilboestrol restores the capacity for wound healing to that present in the fertile age.

Treatment with stilboestrol in vaginal operations in women at the menopause thus allows of improved healing of the wounds. In addition, there are a number of other advantages such as, for example, cleaner secretion from the wounds in the vagina. For a number of years, those women in our clinic, who were to undergo operations on the vagina, have been treated with stilboestrol on purely theoretical grounds with the object of obtaining improved wound healing. The present investigation also demonstrates that more rapid and better healing of the wounds is obtained in women at the menopause when treated with stilboestrol.

SUMMARY

203 patients operated on for prolapse of the uterus were examined for wound healing. 80 of these were treated with 3–5 mg. stilboestrol daily for 12–20 days. In the fertile age, no effect on wound healing could be observed while in women at the menopause a distinct improvement of the healing of wounds was noticed. In vaginal operations on women at the menopause treatment with some oestrogen preparation is recommended.
REFERENCES

Bengtsson, L. Ph.: Personal communication.