

in two of the five patients deemed to be anovulatory. Despite the small numbers, a significant difference in the change in plasma angiotensin II was shown in these patients as compared with the ovulatory patients, with the median value of plasma angiotensin II falling from 29.0 to 15.6 pg/ml ( $p < 0.05$ , Mann-Whitney U test).

Thus this study suggests that the elevated levels of the components of the renin-angiotensin system in the normal menstrual cycle are accompanied by reduced

levels of angiotensin II binding sites on platelets (a suggested model of vascular smooth muscle<sup>1,2</sup>).

#### REFERENCES

1. Ding Y-A, Kenyon C.J, Semple P.F. Regulation of platelet receptors for angiotensin II in man. *J Hypertens* 1985; 3:209-12.
2. Baker P.N, Broughton Pipkin F, Symonds E.M. Platelet angiotensin II binding sites in hypertension in pregnancy. *Lancet* 1989;2:1151.

## Preventing cervical conization by achieving satisfactory colposcopy with hygroscopic cervical dilators

Jeffrey L. Stern, MD,\* Carol Major, MD,\* and Linda Van Le, MD<sup>†</sup>

San Francisco, California, and Milwaukee, Wisconsin

Eighteen women with abnormal cervical cytologic findings and unsatisfactory colposcopic examinations underwent cervical dilatation with Dilapan (Gynotech), a hygroscopic dilator. Dilatation exposed the entire squamocolumnar junction, converting an unsatisfactory colposcopic examination into a satisfactory one and avoiding cervical conization in 17 of the patients. (*AM J OBSTET GYNECOL* 1990;163:176-7.)

**Key words:** Dilapan, unsatisfactory colposcopy, cone biopsy

Since the advent of colposcopy, the frequency of cone biopsy for the evaluation of cervical cancer and intra-epithelial neoplasia has decreased significantly. Nonetheless, a significant number of cone biopsies are performed each year in the United States because of unsatisfactory colposcopy. Colposcopy is considered unsatisfactory if the entire transformation zone or each of the areas of atypical cervical epithelium cannot be completely visualized. Unsatisfactory colposcopy occurs in an estimated 10% to 15% of all women less than 45 years of age with abnormal cervical cytology and occurs even more frequently in postmenopausal women.<sup>1</sup> In these individuals a cervical conization is performed for histologic diagnosis; as a result, one in six women with cervical dysplasia will require a cone biopsy. A cone biopsy may result in an incompetent cervix in pregnancy and an increased risk of premature labor. Subsequent cervical evaluations may be hampered secondary to ascension of the squamocolumnar junction into

the endocervical canal. Other problems include bleeding, infection, anesthesia risks, and cost.

We report the results of a simple technique: dilatating the cervix with Dilapan (Gynotech, Salem Industrial Park, Lebanon, N.J.), a hygroscopic cervical dilator, to convert unsatisfactory colposcopy into a satisfactory colposcopic examination.

#### Material and methods

Eighteen consecutive premenopausal women undergoing colposcopic evaluation under the supervision of the senior author for an abnormal Papanicolaou smear had unsatisfactory colposcopic examinations even after using an endocervical speculum. The patients were premedicated with oral prostaglandin synthetase inhibitors and the cervix was prepped. One Dilapan cervical dilator was inserted just past the external os without penetrating the internal os. The dilator was left in place for 1 to 2 hours. Patients either waited in the waiting room or left the office to return at a designated time. After removal of the dilator with a ring forceps, colposcopic evaluation was repeated.

#### Results

The entire transformation zone was visualized in 17 of 18 patients undergoing cervical dilation. Cramping

*From the Department of Obstetrics, Gynecology and Reproductive Sciences, University of California at San Francisco,\* and the Department of Obstetrics and Gynecology, University Physicians Milwaukee Clinical Campus Practice Plan, Milwaukee.<sup>†</sup>*  
Received for publication June 13, 1989; accepted January 18, 1990.  
Reprints not available.  
6/11/1989

was minimal and no significant complications, including infection, occurred. Early in the study, one Dilapan cervical dilator broke off in the cervical canal during removal. The fragments were easily removed with a packing forceps.

#### Comment

Dilapan is a hema polymer dilator with hydrophilic properties similar to traditional laminaria japonica; however, it expands more rapidly. It may be used in clinical settings suitable for traditional laminaria and may be preferred due to its rapid action.<sup>2</sup> The Dilapan we used measured 3 mm in diameter and 25 mm in length. When exposed to physiologic saline solution or cervical mucus, its diameter quickly increases from 3 to 8 to 10 mm. Previous use of Dilapan has not resulted in significant morbidity, and its efficacy at cervical dilatation has been documented in early pregnancy terminations.<sup>2</sup> Insertion of one Dilapan cervical dilator at a cost of \$6 resulted in enough dilation to convert a

colposcopic examination that was unsatisfactory even with an endocervical speculum into a satisfactory examination. The patients were comfortable and the examination could be completed in a short time. Within 2 hours a definitive diagnosis and recommendations for further therapy can be made; standard laminaria, on the other hand, take approximately 6 hours to fully expand.

We recommend this simple procedure in the evaluation of women with abnormal cytology and unsatisfactory colposcopy despite using an endocervical speculum.

#### REFERENCES

1. Rochelson B, Kromholz BA. The unsatisfactory colposcopy examination. *J Reprod Med* 1983;28:131-3.
2. Darney PD, Dorward K. Cervical dilatation before first trimester elective abortion: a controlled comparison of metenprost, laminaria, and hypan. *Obstet Gynecol* 1987; 70:397-400.

#### Bound volumes available to subscribers

Bound volumes of the AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY are available to subscribers (only) for the 1990 issues from the Publisher, at a cost of \$56.00 (\$79.00 international) for Vol. 162 (January-June) and Vol. 163 (July-December). Shipping charges are included. Each bound volume contains a subject and author index and all advertising is removed. Copies are shipped within 60 days after publication of the last issue in the volume. The binding is durable buckram with the JOURNAL name, volume number, and year stamped in gold on the spine. *Payment must accompany all orders.* Contact Mosby-Year Book, Inc., Circulation Department, 11830 Westline Industrial Drive, St. Louis, Missouri 63146-3318, USA; phone (800) 325-4177, ext. 7351.

**Subscriptions must be in force to qualify. Bound volumes are not available in place of a regular JOURNAL subscription.**