

Short Communication

Uterine Length in Puerperium as Determined by Ultrasonic and External Measurements

(ultrasonics/puerperium/uterus)

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We used ultrasonotomograms to evaluate measurements of the length of the uterus in 38 Japanese women who had had a normal labor and no complications. Decrease in the length of the uterus, although evident with both measurements was more dominant in the case of external measurements. Differences in all measurements between prim- and multiparas were nil. Ultrasonotomograms should find a wide application in studies related to the puerperium.

Bi-manual, sounding and an external measurements of the uterine fundal height in puerperium can be made using ultrasonotomograms. We compared ultrasonic measurements of the length of the uterus in puerperium with findings in the case of external measurements.

The subjects were 38 Japanese women with no complications (18 primiparas and 20 multiparas) who had had a normal labor, at Shimane Medical University Hospital. Measurements were performed continuously from the 1st to the 5th puerperal day by one examiner (T. H.), under conditions of an empty bladder. These measurements were obtained usually by a longitudinal midline approach (Fig. 1). In the ultrasonic measurements, the distance from the uterine fundal height to the cervix was measured through the uterine longitudinal axis by superimposing electronic calipers on an oscilloscope. In the external measurements, transverse scannings were made at intervals of 5mm using an

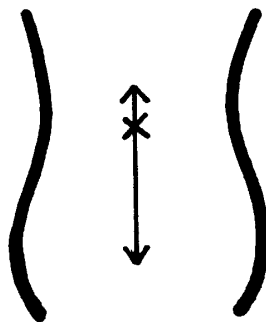


Fig. 1. A longitudinal midline approach to measurement.

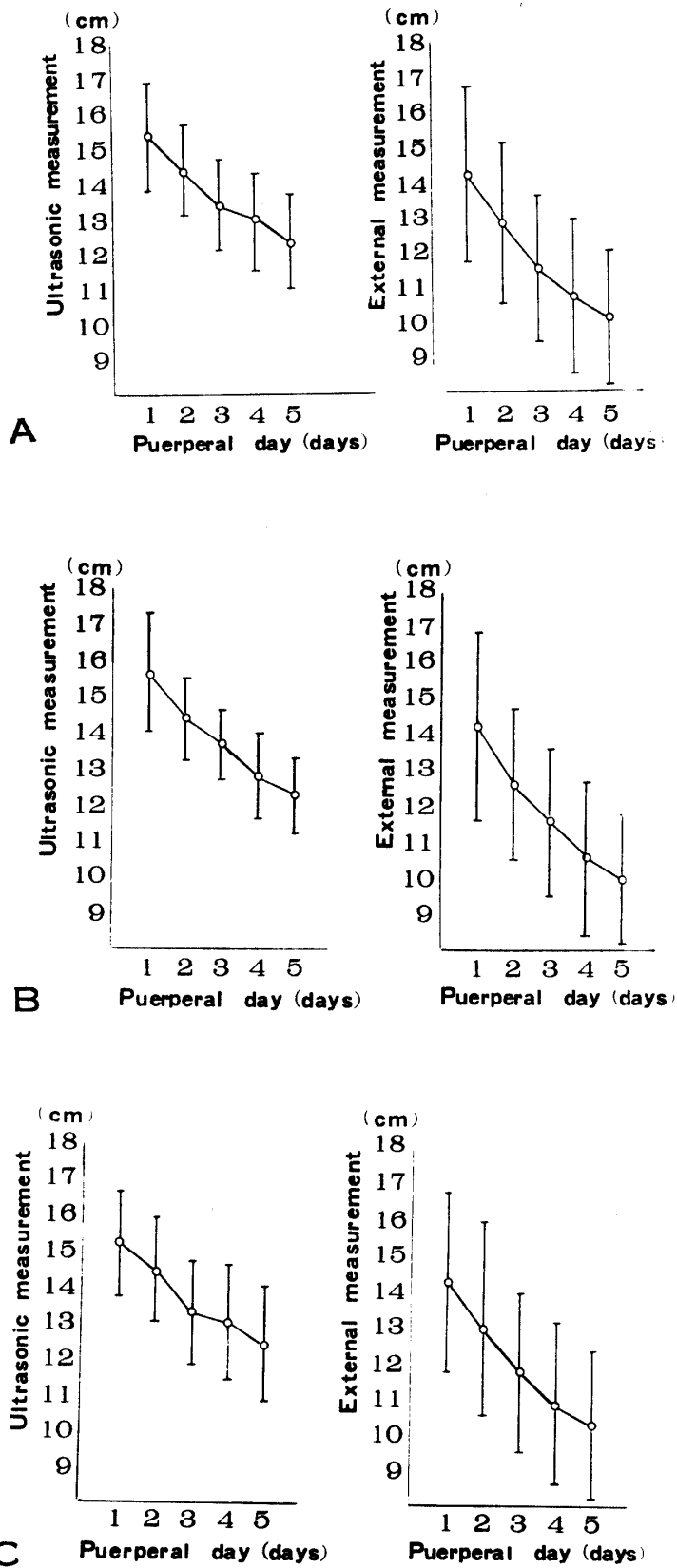
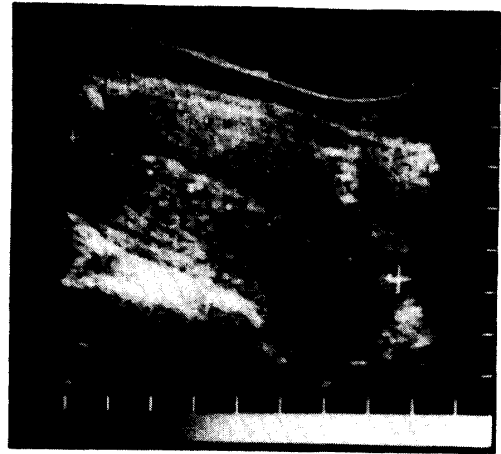


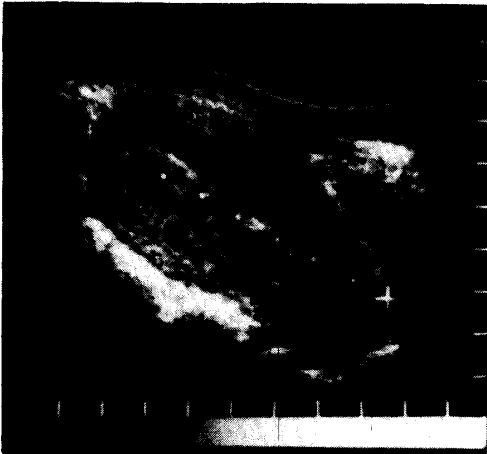
Fig. 2. Puerperal days and ultrasonic and external measurements.
 A : multipara B : primipara C : total



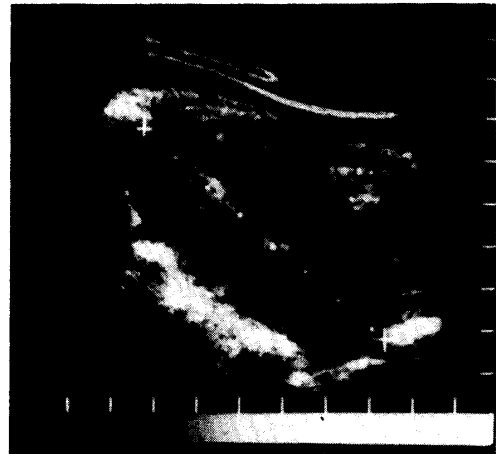
1st day



2nd day



3rd day



4th day



5th day

Fig. 3. Ultrasonotomograms of a normal puerperium.

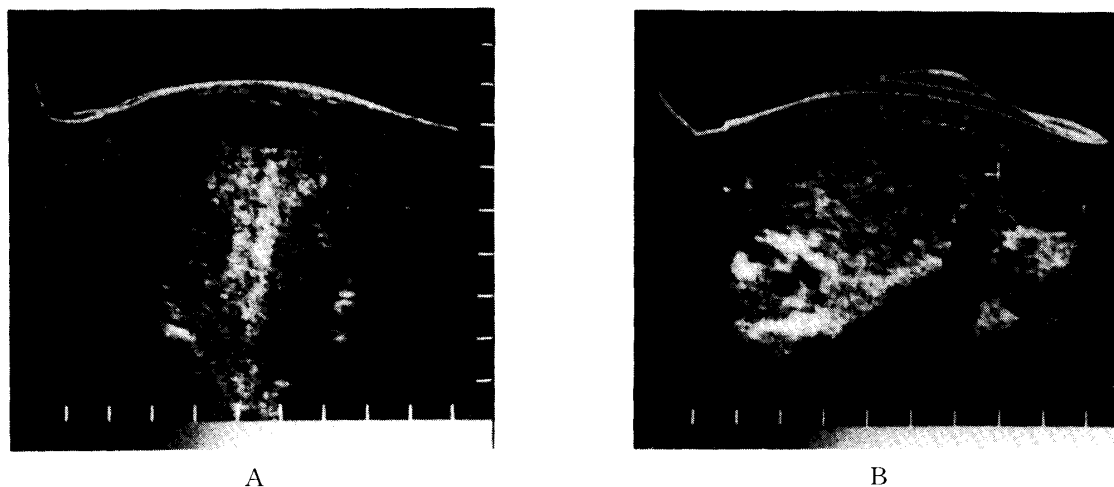


Fig. 4. A : Normal uterine cavity on the 2nd puerperal day.
B : Left ovarian cyst in a normal puerperant.

ultrasonotomogram, and the distance from the point that the uterine fundus disappeared on the oscilloscope to the marked symphysis pubis was assessed using a tape measure. The ultrasonic examination was performed using an Aloka SSD-180 with the use of a 3.5MHz transducer.

Results are shown in Fig. 2. Decrease of the length of the uterus was evident with both measurements and was the most apparent in the external measurements. Differences between primipara and multipara were not evident, with either measurement. Examples of a normal puerperium are shown in Fig. 3. Images of normal uterine cavity on the 2nd puerperal day and left ovarian cyst noted in a normal puerpera are shown in Fig. 4.

Worthen and Bustillo (1) reported that statistically significant differences occurred in fundal height, depending on whether the bladder was full or not, therefore our studies were done under conditions of an empty bladder. Szoke and Kiss (2) found that the size and location of the uterus could be well determined by obtaining daily ultrasonic examinations. Suzumura and Ishihara (3) also reported ultrasonic measurements of the uterine length in puerperium. That mean values were 16.4 cm on the 1st puerperal day, 15.0 cm on the 2nd day, 14.0 cm on the 3rd day, 13.6 cm on the 4th day, and 12.5 cm on the 5th day. Our findings were much the same. In uterine involution in primiparas and multiparas, Szoke and Kiss (2) reported that such proceeded at a more rapid rate in primiparas, and Vanrees *et al.* (4) found no difference between primiparas and multiparas, as did we in the present study. Differences between ultrasonic and external measurements which occur with time are attributed to the finding that the external measurement is a straight distance from the uterine fundus to the symphysis pubis and the uterus assumes an anteversio-flexion with advancement of the puerperium. Therefore, ultrasonic measurement will provide accurate values of the length of the uterus in puerperium. Ultrasonotomograms make it feasible to observe the uterine cavity and the adnexa, as shown Fig. 4.

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