INTRA AND INTEROBSERVER ANALYSIS OF PELVIC FLOOR 3D ULTRASOUND OF CONTINENT WOMEN WHO UNDERWENT TVT-O SURGERY THREE YEARS AGO USING OMNIVIEW™

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OBJECTIVE

To assess intra and interobserver reproducibility of measurements in 3D ultrasound of the female pelvic floor using well described 4D View™ rendered image and the OmniView plan in continent women who underwent urinary incontinence surgery, using transobturator polypropylene tape.

MATERIAL AND METHODS

A cross sectional study with 39 patients who underwent treatment for stress urinary incontinence with transobutrator sling (TVT- O) at Urogynecology and Vaginal Surgery Sector. This research received approval from the local ethics committee. The ultrasound examinations were performed 3 years after surgery, with the patients in the gynecological position, with empty bladder, using the Voluson 730 Expert - General Electric, with a convex volumetric transducer (4-8W) with acquisition angle of 85 degrees. The images were evaluated with 4D View program (GE Healthcare, Zipf, Austria) with the line of sight in the pubis, urethra and tape to obtain the rendered image where we performed measurements of the distance between the pubis and urethra (PU) between the urethra and the tape (UF) and suburethral angle between the branches of the tape (Ao) (Figure 1). After this, the same measures at the plan OmniView (GE Healthcare, Zipf, Austria) were performed (Figure 2). The measurements were performed by two observers with three years of experience in three-dimensional ultrasonography. The first observer (major) performed two measures of each variable with an interval of 7 days in each 4D rendered view and OmniView plan. The second observer performed a single measurement for each variable. The intraclass correlation coefficient were utilized for calculating the intra and interobserver variability Tables 1, 2 ,3 and 4).

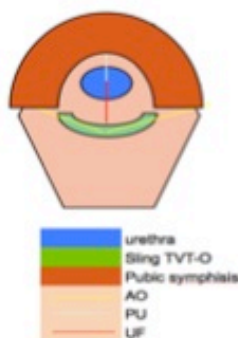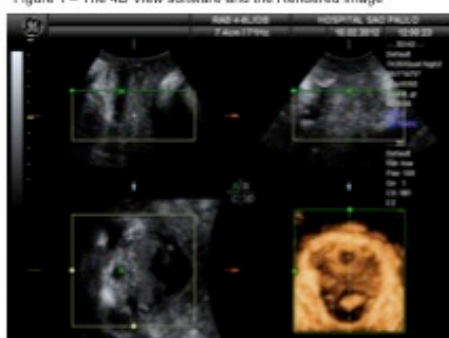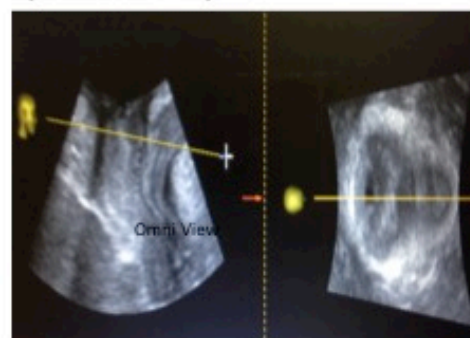Figure 1 – The 4D View software and the Rendered image

Figure 2 – The OmniView image

urethra
Sling TVT-O
Pubic symphisis
AO
PU
UF

RESULTS

Table 1: Analysis of intraobserver reproducibility of Rendered Image

Parammeters	ICC (CI 95%)	P
AO	0,726 (0,537- 0,846)	<0,001
PU	0,778 (0,61 -0,877)	<0,001
UF	0,394 (0,097 -0,628)	0,006

Table 2: Analysis of interobserver reproducibility of Rendered Image

Parammeters	ICC (CI 95%)	P
AO	0,877 (0,779- 0,934)	<0,001
PU	0,933 (0,877 -0,964)	<0,001
UF	0,554 (0,295 -0,738)	<0,001

Table 3: Analysis of interobserver reproducibility of Omni View

Parammeters	ICC (CI 95%)	P
AO	0,798 (0,649- 0,888)	<0,001
PU	0,728 (0,541 -0,847)	<0,001
UF	0,269(-0,044 – 0,535)	0,045

Table 4: Analysis of reproducibility of Omni View versus Rendered Image

Parammeters	ICC (CI 95%)	P
AO	0,879 (0,783- 0,934)	<0,001
PU	0,726 (0,537 -0,846)	<0,001
UF	0,311 (0,002 -0,567)	0,024

Our study demonstrated good intra and interobserver variability for well described in the literature Rendered Image measures and OmniView™ plan in the evaluation of the female pelvic floor, with excellent ICC in the analised parameters.

CONCLUSIONS

The OmniView™ plan proved to be a interesting software to visualization the female pelvic floor structures, having good intra and inter observer reproducibility and comparable with the well known rendered image technique (4D View™ software). The OmniView™ plan allows better standardize gyhe level of the region of interest to study.