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PREVALENCE OF DIASTASIS RECTI AMONG POSTPARTUM FEMALES BY USING MODIFIED DIGITAL CALIPER METHOD

Physiotherapy

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ABSTRACT

Diastasis recti is separation of rectus abdominis muscles this separation is along the midline of abdomen. Generally, many studies are carried out by palpation method only, to achieve more accuracy we have used transparent sheet and digital caliper to measure diastasis recti. To date there is scant knowledge on prevalence of diastasis recti among postpartum females by using modified digital caliper method. The present study aims to investigate the prevalence of diastasis recti in early and late postpartum females using modified digital caliper method and the presence of prominent landmark of diastasis recti from above and below umbilicus and samples are stored on transparent sheets. **Result:** The result is analyzed by paired T test. The conclusion of the study is that the interrecti distance is 18.19 below umbilicus,32.63 above umbilicus and 29.09 at umbilicus as well as the prominent landmark for diastasis recti is 2.13cm above umbilicus and 1.22cm below umbilicus. Maximum prevalence is seen in above umbilicus.

KEYWORDS

Diastasis recti, Modified Digital Caliper, early and late postpartum, transparent sheets.

INTRODUCTION

Rectus abdominis muscle runs vertically along the front of abdomen. The muscle is divided into left and right sides by a band of tissue called the linea alba that runs down the middle[4]. As uterus expands during pregnancy, the abdominals are stretched and the linea alba thins and pulls apart. This band of tissue gets wider as it's pushed outward. After delivery of baby, the linea alba can heal and come back together. It's highly elastic and retracts backs (like a rubber band). When the tissue loses its elasticity from being overstretched, the gap in the abdominals will not close as much as it should. This is diastasis recti[4].

Prevalence of diastasis recti above the umbilicus is 68% and that below the umbilicus is 32% in Indian population. Diastasis recti is common in women after delivery, and it is noticeable right after delivery[1].Excessive inner abdominal pressure causes diastasis recti. During pregnancy abdominal muscles and connective tissues are stretched out from expanding uterus. Diastasis recti is also caused in women whose pregnancies necessitated prolonged inactivity and those females who habitually take very little exercise will certainly find that their abdominal muscles are extremely weak. These women are more prone for diastasis recti[1][9].

Studies have shown various methods to evaluate and measure diastasis recti. The universal methods are finger-width method, tape measure, calliper method, ultrasound method. Recent studies have shown the measurement of diastasis recti is also done via CT and MRI method [7][15][14]. A digital calliper is a precision instrument used to take very accurate measurement. The calliper is easy to use with digital display. Most can measure up to 0.01mm[2] . The method used is modified digital calliper, to preserve the data transparent sheet are used. The future scope of this study is, with the help of preserved samples physiotherapist will be able to obtain the prognosis of diastasis recti who all are under the intervention.

Procedure And Methodoloy

After obtaining IEC approval the women were included according to the inclusion criteria demographic and clinical data were collected after obtaining informed consent. In this method, digital caliper method along with transparency sheet for measuring the inter-recti distance has been used. The position of the subject is crook lying. The subject was asked to lift her head and shoulder forward. And instructed to hold this position. One trial was given to each woman to practice curl up. Diastasis recti was checked by palpating method at, above and below umbilicus and prominent landmark is marked. The distance of the prominent landmark from umbilicus was measured by ruler in cm. Transparent sheet was then kept on abdomen while the midpoint denotes umbilicus, on the prominent landmark diastasis recti is measured via caliper method, samples are stored on transparent sheets. This study is self financial and consent was given by no conflict of interest by the authors.

Figure:1 Transparent sheet used to evaluate the extent of diastasis recti

Figure: 2 Diastasis recti measured with digital caliper method

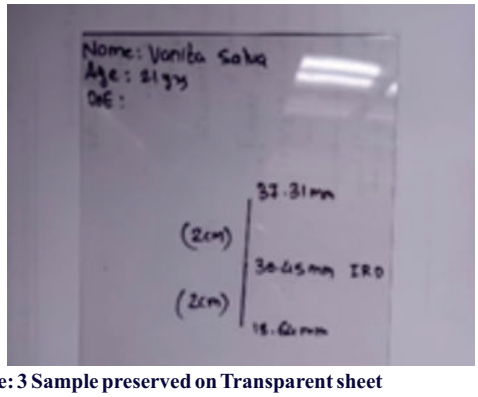


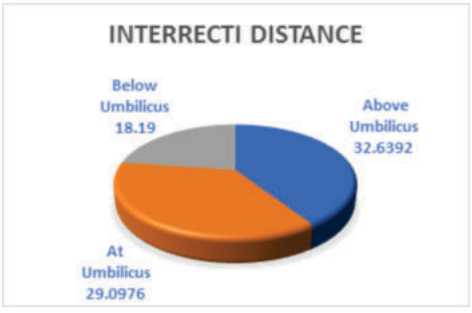
Figure: 3 Sample preserved on Transparent sheet

RESULT

Inter-recti distance at above umbilicus and below umbilicus was found to be (32.6±13.2)mm and (18.1±16.1) mm respectively when measured with Palpating method and accuracy confirmed with Modified Digital Caliper.

Interrecti Distance

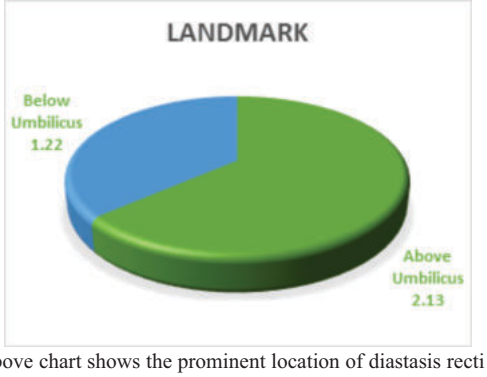
Location	Value(mm)
At Umbilicus	29.09
Above Umbilicus	32.63
Below Umbilicus	18.19



The above chart shows the average interrecti distance at all the three locations. The mean average interrecti distance of 50 samples is as follows, 18.19 below umbilicus,32.63 above umbilicus and 29.09 at umbilicus.

Prominent Landmark

Prominent Location	Value (cm)
Below Umbilicus	1.22
Above Umbilicus	2.13



The above chart shows the prominent location of diastasis recti from umbilicus at the two locations i.e. Above and below umbilicus. The mean average of 50 samples were taken and the result shows that at 1.22cm below umbilicus diastasis recti is seen prominent, and at 2.13cm above umbilicus diastasis recti is seen prominent.

DISCUSSION

The study was conducted for the purpose of obtaining the prevalence of diastasis recti in postpartum women and to identify the prominent location of diastasis recti from above and below umbilicus. In this study we have found, the interrecti distance above, below and at the level of umbilicus is 32.63, 18.19 and 29.09 respectively. So this study demonstrate more prevalence of diastasis recti above umbilicus than at the level and below umbilicus which is similar to the study conducted by Roshan Goal et.al they have conducted the study on the prevalence of diastasis recti abdominis muscle in immediate postpartum women of urban and rural areas and so the result of their study is maximum prevalence of diastasis recti is in above umbilicus . The result of this study is also similar to the study prevalence of diastasis recti abdominis muscles immediately: comparison between primipara and multipara conducted by the author Rett MT et.al .

CONCLUSION

The study concluded that measuring diastasis recti by using palpatory method is reliable but confirming it with the use of modified digital caliper gives more accurate results and at the same time samples are preserved with the help of transparency sheets.

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