

MORFOMETRI ACETABULUM PADA POPULASI INDONESIA MONGOLOID

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Abstrak

Latar Belakang

Morfometri acetabulum merupakan hal yang penting dalam perencanaan penempatan mangkok acetabulum pada operasi penggantian sendi panggul dan operasi acetabulum. Metode tradisional pembedahan saat ini masih mengacu pada populasi Barat. Beberapa penelitian morfometri acetabulum menunjukkan perbedaan antar populasi dan jenis kelamin. Penelitian ini berfokus pada populasi Indonesia Mongoloid dengan menyajikan nilai parameter acetabulum yang diukur berdasar CT scan guna pengukuran yang akurat dan menambah informasi yang bermanfaat bagi klinisi.

Metode Penelitian

Subyek adalah 39 laki-laki dan 20 perempuan Indonesia Mongoloid yang telah setuju untuk dilakukan pemeriksaan dan CT scan panggul di RS Akademik UGM. Dilakukan pengukuran parameter morfometri acetabulum meliputi : (1) *Center Edge Angle* (CE), (2) *Acetabular Index Angle* (AA), (3) *Acetabular Angle of Sharp* (SA) (4) *Acetabular Depth* (AD), (5) *Joint Space Width* (JSW), (6) *Acetabular Version* (Acet AV), (7) *Anterior Acetabular Sector Angle* (AASA), (8) *Posterior Acetabular Sector Angle* (PASA) dari hasil CT Scan subyek penelitian.

Hasil

Rata-rata CE pada laki-laki $38,42 \pm 6,36^\circ$ dan perempuan $42,44 \pm 7,24^\circ$. Rata-rata AA pada laki-laki $12 \pm 3,1^\circ$ dan perempuan $11,2 \pm 4,0^\circ$. Rata-rata SA pada laki-laki $39,0 \pm 3,2^\circ$ dan perempuan $38,4 \pm 4,5^\circ$. Rata-rata perhitungan AD pada laki-laki $16,6 \pm 4,8$ dan perempuan $16,5 \pm 1,9$. Rata-rata JSW pada laki-laki $4,73 \pm 0,74$ dan perempuan $4,71 \pm 0,66$. Rata-rata Acet AV $17,54 \pm 4,36^\circ$ dan perempuan $18,75 \pm 4,46^\circ$. Rata-rata AASA pada laki-laki $66,72 \pm 7,43^\circ$ dan perempuan $64,91 \pm 6,98^\circ$, rata-rata perhitungan PASA pada laki-laki $100,99 \pm 7,64^\circ$ dan perempuan $99,87 \pm 13,93^\circ$. Hanya CE yang berbeda signifikan secara statistik antara laki-laki dan perempuan populasi Indonesia Mongoloid ($p < 0,05$)

Kesimpulan

Morfometri acetabulum pada populasi Indonesia Mongoloid yang terdiri dari Center Edge Angle, Acetabular Index Angle, Acetabular Angle of Sharp, Acetabular Depth, Joint Space Width, Acetabular Version, Anterior Acetabular Sector Angle dan Posterior Acetabular Sector Angle masih dalam batas normal pada populasi dunia. Center Edge Angle merupakan satu – satunya parameter morfometri acetabulum yang berbeda pada populasi Indonesia Mongoloid.

Kata Kunci : Acetabulum, Morfometri, Populasi Indonesia Mongoloid

ACETABULAR MORPHOMETRIC OF THE INDONESIAN MONGOLOID POPULATION

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Abstract

Background

The morphometric study of acetabulum is important part of hip surgery especially on planning acetabular cup placement during Total Hip Arthroplasty and acetabuloplasty. Our traditional surgery methods still based on Western population guidance. Several studies of the acetabular morphometry show a difference between population and sex. This study focused on Indonesian Mongoloid population by providing value of the acetabular morphometry that based on CT Scan image for accuracy measurement which will enhance the information for the clinician.

Method

This study is a cross sectional study. The subject was 39 male and 20 female on Indonesian mongoloid populations who were agree to be included then performed hip CT Scan at Academic Hospital of UGM. The acetabular morphometric parameters that measure in this study are : (1) Center Edge Angle (CE), (2) Acetabular Index Angle (AA), (3) Acetabular Angle of Sharp (SA) (4) Acetabular Depth (AD), (5) Joint Space Width (JSW), (6) Acetabular Version (Acet AV), (7) Anterior Acetabular Sector Angle (AASA), (8) Posterior Acetabular Sector Angle (PASA) using image of CT Scan.

Result

In this study, we found that mean male CE $38,42 \pm 6,36^\circ$ and female was $42,44 \pm 7,24^\circ$. Mean male AA was $12 \pm 3,1^\circ$ and female was $11,2 \pm 4,0^\circ$. Mean male SA was $39,0 \pm 3,2^\circ$ and female was $38,4 \pm 4,5^\circ$. Mean male AD was $16,6 \pm 4,8\text{mm}$ and female was $16,5 \pm 1,9\text{mm}$. Mean male JSW was $4,73 \pm 0,74\text{mm}$ and female was $4,71 \pm 0,66\text{mm}$. Mean male Acet AV was $17,54 \pm 4,36^\circ$ and female was $18,75 \pm 4,46^\circ$. Mean male AASA was $66,72 \pm 7,43^\circ$ and female was $64,91 \pm 6,98^\circ$, mean male PASA was $100,99 \pm 7,64^\circ$ and female was $99,87 \pm 13,93^\circ$. Only CE that was found statistically different between male and female Indonesian mongoloid populations ($p < 0,05$).

Conclusion

Acetabular morphometric of the Indonesian Mongoloid population that consist of Center Edge Angle, Acetabular Index Angle, Acetabular Angle of Sharp, Acetabular Depth, Joints Space Width, Acetabular Version, Anterior Acetabular Sector Angle, and Posterior Acetabular Sector Angle within normal limit among the world's population. Center Edge Angle was the only one different parameter between male and female acetabular morphometric among Indonesian Mongoloid population.

Keywords : Acetabular, Morphometry, Indonesian Mongoloid Population