

Conventional roentgenograms of the cervical spine in anteflexion and retroflexion : a new method to optimize their clinical significance

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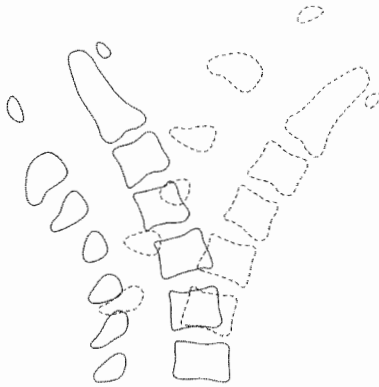
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Stellingen
behorende bij het proefschrift

Conventional roentgenograms of the
cervical spine in anteflexion
and retroflexion; a new method to
optimize their clinical significance

H.J.M. MAJOIE



- I. Kinematische analyse van funktiefoto's van de cervicale wervelkolom levert voor individuele patiënten klinisch relevante informatie op mits de analyse wordt uitgevoerd zoals beschreven in dit proefschrift.
- II. Verminderde beweeglijkheid van de cervicale wervelkolom wijst op pathologie wanneer dit samen gaat met een voorkeurshouding in anteflexie. (Dit proefschrift)
- III. Structurele veranderingen in een bewegingssegment beïnvloedt het kinematisch gedrag van de boven- en onderliggende bewegingssegmenten. De kinematische analyse van funktiefoto's van de cervicale wervelkolom dient dan ook betrekking te hebben op alle zeven bewegingssegmenten. (Dit proefschrift)
- IV. Patiënten met een cervicale discus hernia worden kinematisch gekarakteriseerd door verminderde beweeglijkheid van de cervicale wervelkolom en een typische configuratie van de 'R-zero line'. (Dit proefschrift)
- V. Patiënten die het klinisch beeld vertonen van cervicale myelopathie door cervicale kanaalstenose worden kinematisch gekarakteriseerd door afname van de voor-achterwaardse mid-sagittale diameter van het cervicale spinale kanaal, gekombineerd met verminderde beweeglijkheid van de cervicale wervelkolom en afname van cervicale discushoogten. (Dit proefschrift)
- VI. Uncovertebrale gewrichten spelen een belangrijke rol bij axiale rotatie.
- VII. De resultaten van moderne beeldvormende diagnostiek komen tot stand door de verwerking van digitale gegevens. Wanneer deze basale kwantitatieve informatie uitsluitend kwalitatief wordt beschreven gaat belangrijke diagnostische informatie verloren.
- VIII. Voor de operatieve benadering van laag-thoracale processen in of aan de wervelkolom, waarbij ook een foramen is betrokken, dient pre-operatief angiografisch onderzoek verricht te worden.
- IX. Een categoriaal ziekenhuis dat is ingericht voor de diagnostiek en behandeling van patiënten met epilepsie dient te beschikken over optimale MRI faciliteiten.
- X. De nervus vagus stimulatie is een effectieve behandelingsmethode voor patiënten met pharmacotherapie-resistente epilepsie.
- XI. Er is onvoldoende bewijs dat de mate van chirurgische tumorreductie de prognose van patiënten met een maligne glioom beïnvloedt.

Abbreviations

BASIC KINEMATIC VARIABLES

[aa1]	Atlanto-axial distance in antelexion
[aa2]	Atlanto-axial distance in retroflexion
[ar]	Angle of rotation: (e.g. [ar C5C6])
[dd1]	Dynamic diameter in antelexion: (e.g. [dd1 C6C7])
[dd2]	Dynamic diameter in retroflexion
[dh1]	Disc height in antelexion: (e.g. [dh1 C5C6])
[dh2]	Disc height in retroflexion
[xR]	Rotation centre of a motion segment, x-co-ordinate: (e.g. [xR C4C5])
[yR]	Rotation centre of a motion segment, y-co-ordinate
[xR7]	Rotation centre with respect to C ₇ , x-co-ordinate: (e.g. [xR7 C6])
[yR7]	Rotation centre with respect to C ₇ , y-co-ordinate
[sdh]	Static diameter of the spinal canal, cranial border: (e.g. [sdh C4])
[sdl]	Static diameter of the spinal canal, caudal border
[tr]	Translation: (e.g. [tr C4C5])

DERIVED KINEMATIC VARIABLES

[Sum ar]	Sum of the angles of rotation within the individual motion segments C ₆ -C ₇ up to and including C ₀ -C ₁
[Sum tr]	Sum of the translations within the individual motion segments C ₆ -C ₇ up to and including C ₀ -C ₁
[Sum dh1]	Sum of disc heights of the segments C ₆ -C ₇ up to and including C ₂ -C ₃ in antelexion
[Sum dh2]	Sum of disc heights of the segments C ₆ -C ₇ up to and including C ₂ -C ₃ in retroflexion
[Sum sdh]	Sum of superior static sagittal diameters of C ₆ up to and including C ₂
[Sum sdl]	Sum of inferior static sagittal diameters of C ₆ up to and including C ₂
[Sum dd1]	Sum of dynamic diameters in antelexion of segments C ₆ -C ₇ up to and including C ₁ -C ₂
[Sum dd2]	Sum of dynamic diameters in retroflexion of segments C ₆ -C ₇ up to and including C ₁ -C ₂

- [SmarC0-2] Sum rotation of segments C_1-C_2 up to and including C_0-C_1
- [SmarC0-3] Sum rotation of segments C_2-C_3 up to and including C_0-C_1
- [SmarC3-6] Sum rotation of segments C_6-C_7 up to and including C_2-C_3
- [SmR7x0-2] Sum of x-co-ordinates of R-Centres of C_2 up to and including C_0 with respect to C_7
- [SmR7x2-5] Sum of x-co-ordinates of R-Centres of C_5 up to and including C_2 with respect to C_7
- [SmR7x5-6] Sum of x-co-ordinates of R-Centres of C_5 and C_6 with respect to C_7
- [SmR7y0-2] Sum of y-co-ordinates of R-Centres of C_2 up to and including C_0 with respect to C_7
- [SmR7y2-5] Sum of y-co-ordinates of R-Centres of C_5 up to and including C_2 with respect to C_7
- [SmR7y5-6] Sum of y-co-ordinates of R-Centres of C_5 and C_6 with respect to C_7
- [SmTrC0-2] Sum translation of C_2 up to and including C_0
- [SmTrC3-6] Sum translation of C_6 up to and including C_3
- [ar C6C7sr] Segmental rotation (*ar*) expressed as a fraction of the sum-rotation (*sr*): ([ar C6C7sr] [ar C1C2sr])
- [ar C67C56] Segmental rotation (*ar*) expressed as a fraction of the rotation in the segment above (*angle of rotation C_6-C_7 with respect to C_5-C_6 is given as [ar C67C56], etc*)
- [trar6] Translation-rotation ratios of C_6-C_7 up to and including C_0-C_1 :([trar6] [trar0])