COMPARISON OF AIR COUPLED BALLOON ESOPHAGEAL MANOMETRY CATHETERS WITH SOLID-STATE ESOPHAGEAL MANOMETRY CATHETERS

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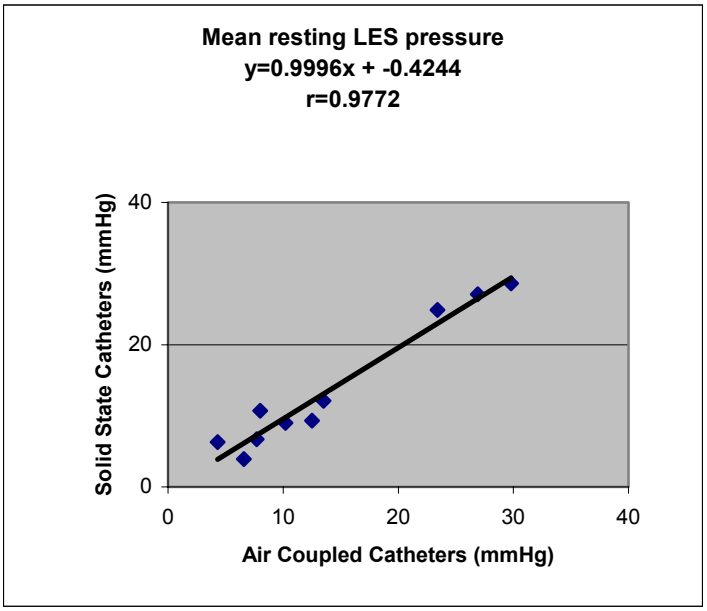
Purpose: Clinical esophageal manometry studies are currently performed with multilumen water perfused polyvinyl or strain gauge sensor solid-state catheters. A disposable catheter (Clinical Innovations Inc., Salt Lake City) incorporating air filled balloons that can be coupled to a standard manometry polygraph has been developed with the performance characteristics suitable for esophageal studies. Our aim was to compare esophageal pressure measurements using this newly developed catheter with measurements obtained using standard solid-state catheters. Methods: Standard esophageal manometry studies were performed in ten healthy volunteers using a air filled coupled balloon (ACBC) and solid-state esophageal catheters (SSC). Mean and individual measurements of resting LES pressure and esophageal body contraction amplitudes were obtained and compared. Linear regression and correlation analysis were performed for the above variables. Results: Mean LES pressure and esophageal body contraction amplitudes obtained with the different catheters were not significantly different. The mean resting LES pressure was 14.29±2.88 mmHg using the ACBC's compared to 13.86±2.94 mmHg using the SSC's. The mean distal esophageal body contraction amplitude was 78.2±9.14 mmHg using the ACBC's and was 75.17±9.14 mmHg using the SSC's. There was a very high and statistically significant degree of correlation between LES pressure and distal esophageal body contraction amplitudes measured with ACBC's and the SSC's (r=0.98 for LES pressure and r=0.92 for esophageal body contraction amplitudes)(Figure 1). Conclusions: Recently developed disposable air coupled balloon esophageal manometry catheters provide identical measurements of LES and esophageal body pressures compared to presently used solid-state manometry catheters.



COMPARISON OF AIR COUPLED BALLOON ANORECTAL MANOMETRY CATHETERS WATER PERFUSED ANORECTAL MANOMETRY CATHETERS

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Purpose: Clinical anorectal manometry studies are currently performed with multilumen water perfused polyvinyl or strain gauge sensor solid-state catheters. A disposable catheter (Clinical Innovations Inc., Salt Lake City) incorporating air filled balloons that can be coupled to a standard manometry polygraph has been developed with the performance characteristics suitable for anorectal manometry studies. Our aim was to compare anorectal pressure measurements using this newly developed catheter with measurements obtained using standard water perfused catheters. Methods: Standard anorectal manometry studies were f=performed in nine healthy volunteers using a water perfused anorectal catheter (WPC) and air coupled balloon anorectal catheter (ACBC). Mean and individual measurements of anorectal rest and squeeze pressures were obtained and compared. Linear regression and correlation analysis were performed for the above variables. Results: Mean anorectal resting and squeeze pressures obtained with the different catheters were not significantly different. The mean resting pressure anal sphincter pressure was 51.58±10.21 mmHg using the ACBC and 48.94±8.31 mmHg using the water perfused anorectal catheter. The mean squeezing anal sphincter pressure was 75.72±15.05 mmHg using the ACBC and 69.15±9.72 using the WPC. There was a very high and statistically significant degree of correlation between the resting and the squeeze anal sphincter pressures measured with the ACBC and the WPC (r=0.95 for resting pressure and r=0.77 for squeeze pressure) (Figure 1). Conclusion: Recently developed disposable air coupled balloon anorectal manometry catheters provide identical measurements of anorectal sphincter pressures compared to presently used water perfused manometry catheters.