Search CDDW 2009 Abstracts

HOME

Return to Table of Contents

247

A COMPARISON OF HIGH-RESOLUTION AND WATER-PERFUSED MANOMETRY FOR ANORECTAL DISORDERS

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Aims: Anorectal manometry has traditionally been assessed using a low-compliance water-perfused system (WP). A new high-resolution manometry (HR) system using circumferential sensing solid state transducers is now available and has been used in our unit for the past 9 months. Although a recent study has shown that the two methods are well correlated, it also suggested that pressures recorded on HR tended to be higher than those recorded using WP. The aim of our study was to determine, the magnitude of difference and the degree of correlation, between the two systems. Furthermore, we sought to determine whether the observed differences were consistent between patients referred for constipation versus those referred for incontinence.
Methods: We performed anorectal manometry on 28 consecutive patients using both the WP and HR systems. WP was performed using an 8 port radial catheter (Mui Scientific). HR was performed using the ManoScan 360AR, 5.6 cm, 12 channel probe (Sierra Scientific). Data was analysed using ManoView (Sierra Scientific) and BioView (Sandhill Scientific) software packages, respectively. Anal sphincter pressures at rest (mean and maximum) and during voluntary squeezing were assessed. Data are presented as mean ± standard deviations (*p<0.01, #p<0.05 vs WP).
Results: A total of 28 patients with a primary complaint of constipation (CON, n=9), incontinence (INC, n=15) or other disorders (n=4) were evaluated. Patients with fecal incontinence had lower pressures than those with constipation as assessed by both systems. There was a linear correlation between the values obtained by the two systems (r^2=0.73, p<0.001) with HR displaying consistently higher values by an average of 25.9 ± 28.1 mmHg.
Conclusions: The HR system consistently produces higher pressure measurements than the WP system, independent of the indication for testing (constipation versus incontinence). Despite this trend, there is a high degree of correlation between the two systems. A study is underway to prospectively evaluate healthy volunteers to establish normal/standard parameters for the HR system.

Mean Anal Sphincter Pressure Measurements: Water-Perfused versus High-Resolution Manometry

	Water-perfused system	Water-perfused system	Water-perfused system	Sierra high-resolution system	Sierra high-resolution system	Sierra high-resolution system
	ALL	CON	INC	ALL	CON	INC
Mean Resting Pressure	27.2±18	37.8±13	21.5±15	49.4±27*	64.1±30*	40.8±20*

Maximum Resting Pressure	37.4±26	52.2±23	29.9±22	54.2±29*	68±13*	45.9±23*
Squeeze Pressure	89.9±55	92.7±62	74±39	116.8±59*	144±69#	90.3±39#

*Data are presented as mean (mmHg) ± standard deviations (*p<0.01, #p<0.05 vs WP)*

PREVIOUS NEXT