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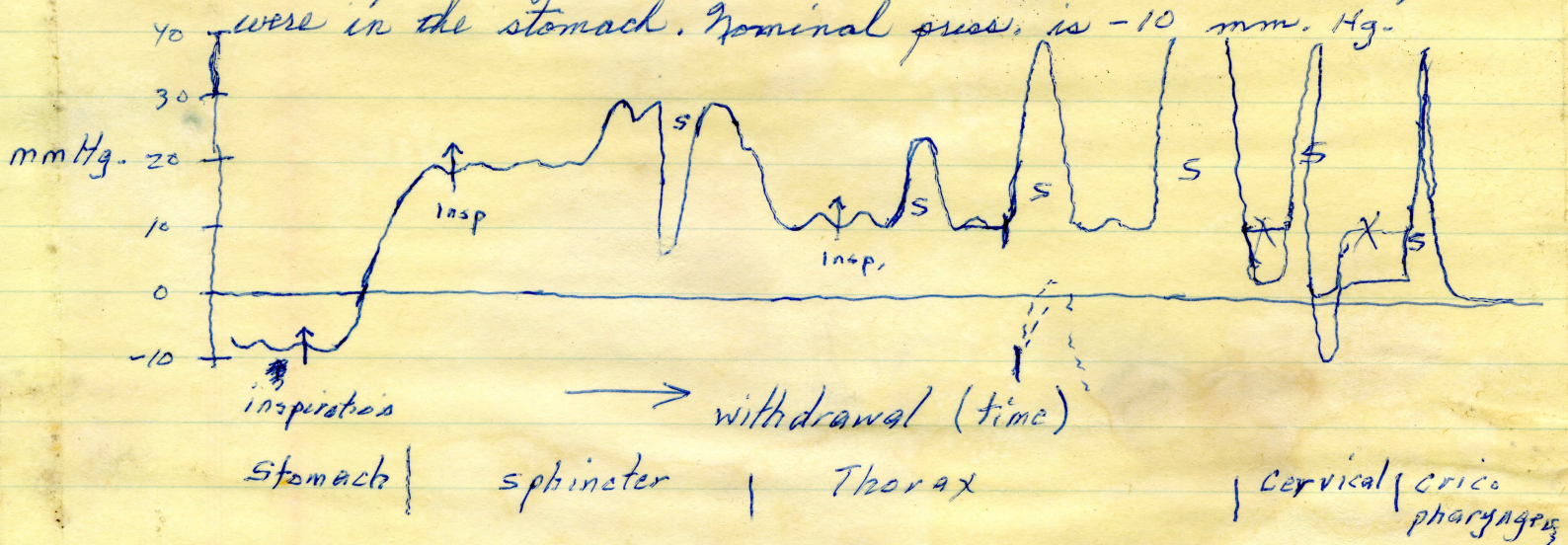
Resume of visit to Chicago Univ. & BDM & C.S.

8 Aug 1980

Dr. Tom Demester, Sect. Thoracic and Gastric Surgery
Dept. Surgery, Univ. Chicago Pritzker Sch. of Med. has worked in
intraesophageal ^{PH} monitoring for ten years in an effort to
develop an objective measure of esophageal reflux. He has
been in contact with BDM for some time regarding development of
an ambulatory monitoring system. He took us to his
lab where a complete study on a normal patient was done,
and to ~~the~~ ^(CRU) the ward, where two pts. were being studied
and then to a briefing on radio isotope studies on rate of
removal of tagged ~~radio~~ material.

The lab was well organized with an efficient staff, technician
(whose father was the normal subject) residents and fellows, and
a well kept lab using ~~very old~~ outmoded apparatus for
the job at hand; three large carts with servo strip chart recorders,
a Beckman pH meter and isolator for pH measurements and
a Brush 4 channel recorder with 3 P23D transducers, three
vinyl Hg weighted tubes with orifices 5 cm apart, glued together and
a constant pressure (gas) infusion device.

A pressure study was done first by passing the triple
catheter far enough ~ 52 cm to insure that all three orifices
were in the stomach. Nominal press. is -10 mm. Hg.



The catheter was withdrawn 1 cm. at a time with frequent
requests to swallow. The above general pattern was observed,
phases delayed by the distance/time of the separated orifices.
A number of static and dynamic features could be observed.
Pressure increased as one approached and passed the sphincter

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and phase of respiratory pressure waves reversed. Swallowing produced a reduction in pressure at this point. As ~~one~~ ^{the catheter} passed up the esophagus pressures on swallowing increased until the cervical area was reached where ~~they~~ ambient pressure dropped and ~~they~~ swallowing pressures were reduced and became shorter, possibly as a result of 7 somatic & smooth muscle. As the C-P area was approached there was a biphasic ^{+ then -} swallowing wave, which became a short sharp spike in the upper pharyngeal area. Swallowing waves could be followed, in phase, on the three ~~seg~~ records.

This pressure data gives information on sphincter tone and location, ~~eg.~~ distance from nasal orifice, static and dynamic pressures including relation of swallowing waves (voluntary peristalsis(?)).

A functional sphincter integrity