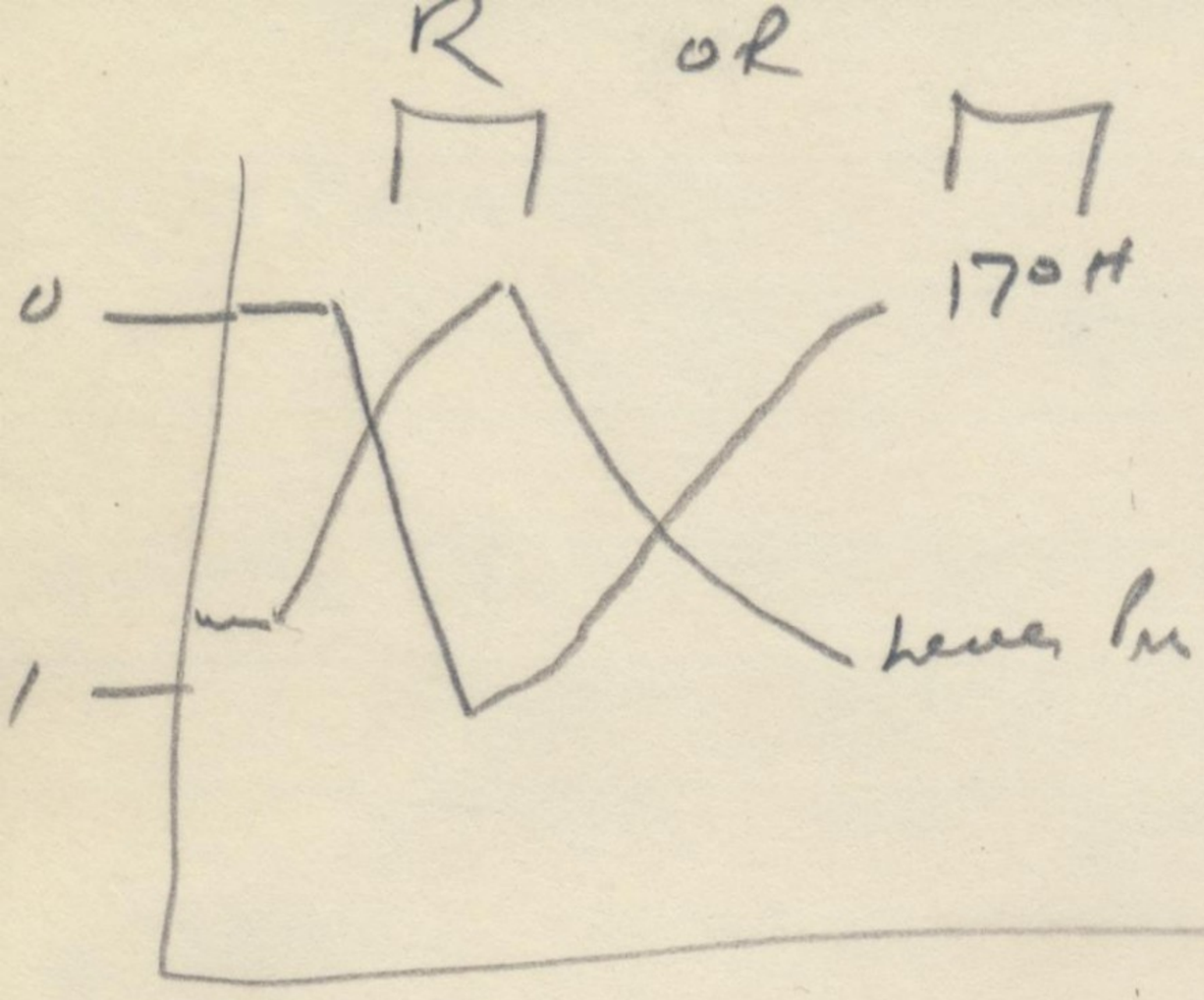

R
OR
170°H
0
1

12/30 Brady.

Lever pressing ē stress. Rate of lever pressing dependent on drug.

Amphet. inc. lever pressing

Reserpine slows but also permits animal to work thru stress period

17-OH Keto st. inc. during stress — decreases during

Tuskegee

Presumptions that are wrong:

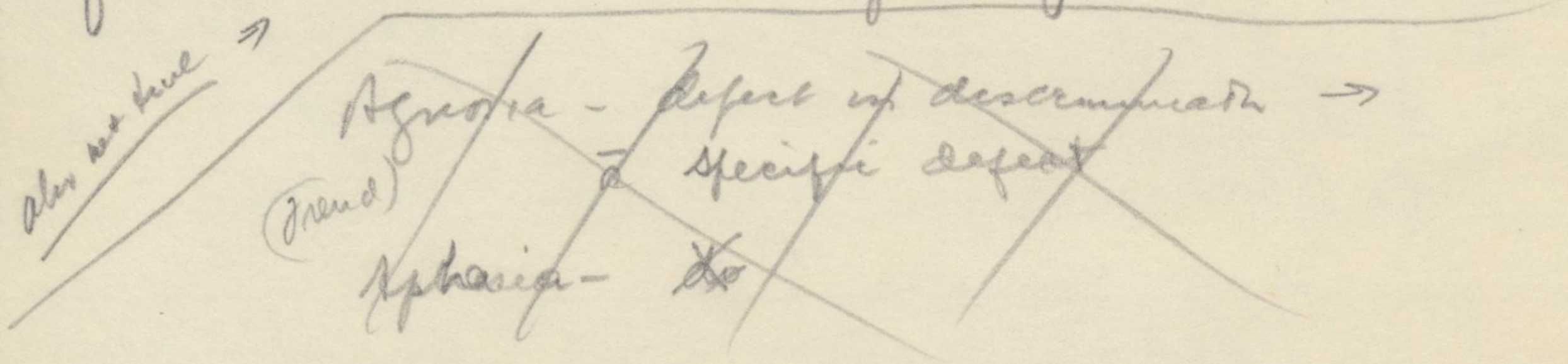
1) Expectation that brain lesion defect that can be picked up by clin. tests

2) If there are changes in frontal lesion, the changes are specific

3) All changes are generalized - no matter where the lesion

Concl: Specific + General effects are tied together

4) Damage pluffs portally + anteriorly, that frontal lobes take over largest fx —



the presence of the brain & ant. lesion. (Teuber) the lack of presence to chemical lesion (Benton)

Tachistoscope of Lazarus & Leary

NOTES

In paper on tests in ESS refer to Teuber's
general
comment that tests are valuable &
do not measure all br fx – as
AGCT in predict. wds of CNS –
AGCT is poor test for all br fx –
exc for (?) aphasia

(1) Spec scotoma – (2) CFF ↓, Dark adap in good field
(3) gestalt loss – regardless of locus of
defect

aphasia makes a signif difference in
gestalt scores

Similarities: 1) clinical. von Frei hairs – } rise in thresh loc.
2) ? rise in thresh in
uninvolved hand – on
object discrimination tasks

3) Form board discr –
(gestalt loss)

Frontal Lobe –
coordinat of distance
& postural reflexes

INDEX TO ADVERTISERS

Scheerer: Consciousness Reconsidered

Arch of P 1982 67: 199–

after general phenomenol. survey.

December Cs as ① terms of "degree" + ② "kind".

Head's concept of vigilance as area of generality; consciousness as vigilance, or increased activity of [illegible] cortical centers.

In footnote, notes Cs as Spectrum.

Cobb: Cs as "a fx of N.S. in action, just as much as contraction is a fx of muscle"

③ Time factor

④ balance + rhythm:

One can speak of consciousness never being "free" for attention is focused on one, now another object.

– Cs involves brain stem + cortex + ? of that. as a continuous chain

Summary pg xxx:

Complains that current topographic (qual) and energetic (quant) aspect of Cs are inadequate. Summation is not one either of energy or of neurons, but of both as a whole "Degree of Cs depends as much on degree of topographic relationships as does its kind or content. Indeed, degree + kind are interdependent, etc.

Mind is a relationship.
Consciousness is a state of awareness in with behavior
patterns that persist for what is aware.
If awareness is altered, behavior is necessarily
altered.

Mind: p 195 Ard. 1958

Lashley: Dominance of Penfield.

If awareness altered (by for slow scanning-
or for slow integration)

Re discrimination ↓-
" Behavior ↓.

Every response is product of
input + substrate → Regulated by stimulation

Theory of Cerebral Localization Gordy + Nathanson

Lancet 1951

"Localization is an artificial observer-made attribute of the brain ...
... is an abstraction of the part which may take us
further and further from reality."

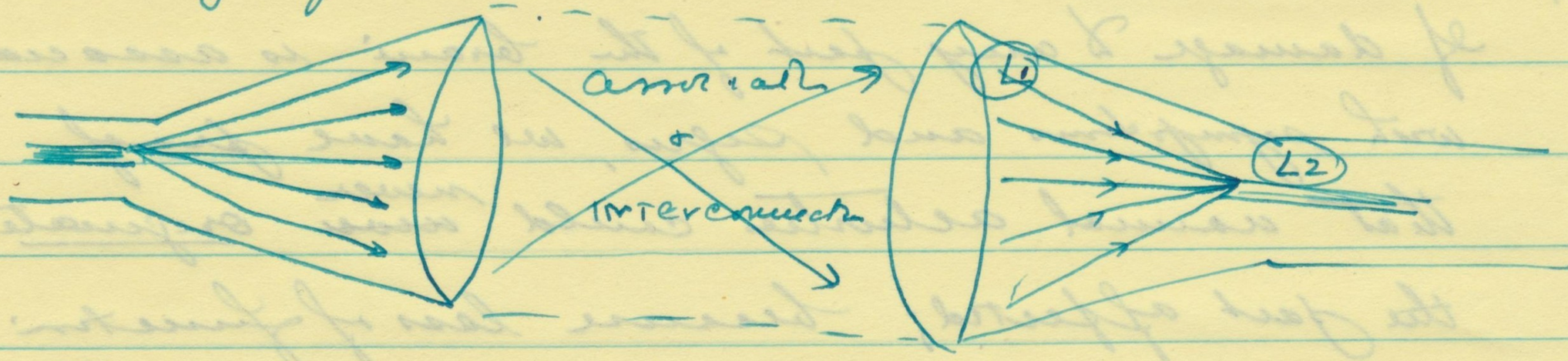
The more delicate the testing, the more removed the
results from the actual ~~or~~ and thus must
I make

It is only in group subjects that a chronic cerebral
lesion can be adequately circumvented
by establishing new localized functions

Residual fx must depend on residual
cerebral tissue.

"It is the rare but incontrovertible inconsistencies
in a theory that lead to revision fruitful of
further advances."

(II) blockage of activity



(L2) = capsular = summit defect, early demonstrated

(L1) = penultimate = diffuse = "ideational

L1 = confusion, amnesia, disorientation, dementia, aphasia, apraxia

18th a) Brain is not the site of the beginning of volitional impulses and the end of sensation impulses, but a very important and complex "ganglion in the cycle of activity.

b) We cannot say where or when a set of impulses associated with sensation or volition originates for the whole state of activity of the nerons system is constantly changing.

c) Any movement, of which speech is a special instance, cannot be separated from the previous experience and activity of the mover. Every movement and every sentence must be regard BIOGRAPHICALLY. ie. thus every new movement is only an observable stage of a highly complex process, which never finds a end so long as life continues.

Goodby: Cerebral Representation Brain 1956.

Thesis:

RI. If damage to any part of the brain is associated with symptoms and signs, we have proof that normal activities could never originate in the part affected; because loss of function associated with damage to the part must be due to bloodsupply, by the lesion in the part, late in the sequence of nervous activity, and not at its origin.

(1) Origin of activity: cycle of nervous act. is

vol. movement ↗

↑

Fin. Constant.

↑

UMN ← Sensori-motor cortex

↑

Special Sensory Cortex ← Sensory Rad. ↙ SP Cord.

↓↑

Frontal Cortex

Brain is not the origin of impulses but an important station "through which the flow of impulses passes, from the sensory to the motor side, and in which rearrangement of the impulses in space + time takes place."

12/56

Ruesch + Kees

0'76 "... observations in neurophysiology and neuropathology seem to support the thesis that the fundamental differences of analogic and digital language are reflected in patterns of organization of the central nervous system, and that in all neurosis and mental disorders of some severity the digital- verbal- discursive forms of language are affected earlier and more severely than the analogic- nonverbal- nondiscursive forms."

189.

Nonverbal codifications: 1) Sign language
2) Action "
3) object "

1/16/56

Cairns: Dist. of Consciousness with Lesion of Brain Stem

75. Brain 6/52

"

1) "Consciousness can be disturbed by lesions any part of the brain stem, and that somatic accompaniments of unconsciousness tend to vary with the site of the lesion ... "

p. 110

2) Cobb's definition of consciousness: "an awareness of environment and self"

3) Cairns defines consciousness operationally: a) type of response to common afferent stimuli as pain, pressure, sound, light, food

b) We assume Cs. to mediate motor behavior i.e. simple spinal reflex to awareness while integrated motor acts = higher degree of awareness

c) After recovery, inquiry of recall

d) Full cons. when subject is continuously aware of events

e) EEG

4) Cairns emphasizes "degrees of Cs."

5) Unconsciousness accompanying org. lesions of brain stem + thalamus is largely a disorder of crude consciousness.

(140)

6) Cortex "makes possible a more discriminating consciousness" (Cobb) - the basic state of wakefulness + crude awareness depends on activity at lower levels.

(141)

7) "Centres" concerned ē wakefulness + sleep have been discovered in hypothalamus (Hess, Ramon + Magoun) Thus 7 idea has since been developed into that of a pacemaker mechanism maintaining (or ceasing to maintain) the cerebral cortex in a state of wakefulness.

8) Removal of frontal ablations in man create no disturbance of crude consciousness, but rather deprives the well, motivated, foresight + a reflecting power of man.

9) Thalamus + cortex inseparable

10) Loss of CS not explained ~~but~~ by destruction of sensory pathways fm the periphery, but "absence of those that afferent impressions from the outside world and from within the body are essential for conscious experience..."

11) Recall views of John Fiske (1874 - Outlines of Cosmic Philosophy)

"Consciousness ... implies continual discrimination or the continual recognition of likeness and difference, and the process implies a rapid succession of changes in the supreme ganglia. ...

1874: " There is no consciousness except when molecular disturbance is generated in the cerebrum and cerebellum faster than it can be drafted off to the lower centres. It is the surplus of molecular disturbance remaining in the cerebrum and cerebellum + reflected back + forth --- that affords the physical conduit for manifestations of Consciousness."

December 17, 1956

Concept of Cerebral Localization vs Mass Action Effects

1) Certain functions ascribed to CNS are "localizable", as vision, motor power, motor aphasia; while others, as memory, judgment, insight, calculation, figure-ground, are non-localizable. The first group are cortical (more peripheral than central); damage is generally permanent; small lesions have marked effects; and EEG is usually not pathological.

The non-localizable lesions are generally deep or basal; recovery of function is possible; small lesions have no effect (i.e. a mass action law is applicable) and EEG effects are prominent.

2) EST results in a non-localizable lesion - with diffuse dysfunction. It is the technic par excellence to study such mass action lesions.

3) Psychological tests of "OMS" are positive to the degree that they measure mass action effects rather than focal - except if focal dysfunction interferes with performance as in lesions affecting vision, motor power and speech.

4) Concept of Active vs Static Lesions:

In studies of head injuries, lobotomy and post operative cases of six or more months duration, the studies reflect localizable (cortical) defects mainly: for the deeper activities are no longer active. Any defects in function are expressions of specific cortical localizable damage.

In contrast, studies of brain tumors, immediate post-traumatic states, post-lobotomy, and EST (early) are studies of active dysfunction - a combination of the focal and the diffuse defects. The degree of dysfunction depends on the mass effect, plus the localized defect.

ination revealed adherence of the fundus and nodules throughout the adnexa. A diagnosis of pelvic endometriosis was made, and on Aug. 18, 1955, total hysterectomy with bilateral salpingo-oophorectomy was performed. The patient's postoperative recovery was again uneventful. In the four and one-half years after the thoracotomy, the patient has had no recurrent chest symptoms or pneumothorax.

Comment

Aberrant endometrial islands have been reported in many locations, including the ovaries, uterine ligaments, rectovaginal septum, sigmoid colon, urinary bladder, umbilicus, laparotomy scars, hernia sacs, appendix, vagina, vulva, cervix, lymph glands, and small intestine, and in bizarre locations, such as the upper and lower extremities, lungs, and pleura.[1] Sampson's [2] original theory of transtubal regurgitation of menstrual blood and endometrial particles, published in his original paper in 1921, could certainly explain the method of implantation of endometrial growths on the pelvic and intra-abdominal viscera, as well as on the inferior aspects of either leaf of the diaphragm. The lymphatic and hematogenous dissemination theory of Halban would be necessary to explain distant endometrial implants in the thigh, lung, and pleura.[1a] Distant spread without passing through the pulmonary capillaries could occur only by way of the vertebral veins or "lung shunts" which have apparently been demonstrated between the pulmonary arteries and veins bypassing the lung capillaries.

In view of the concomitant finding of pelvic endometriosis and the involvement of all layers of the right leaf of the diaphragm, with perforation and supradiaphragmatic seeding demonstrated by thoracotomy, in the present case report, it would seem logical to conclude that the endometrial involvement of the diaphragm must of necessity have occurred as the result of transtubal regurgitation and transperitoneal dissemination. Exact explanation of the method of development of the pneumothorax on the right side is more difficult. However, the clinical observation that all episodes of pneumothorax occurred only during the time of menstruation, and the inability to demonstrate any source of lung leak or primary disorder in the lung which could explain any possible leakage of air into the pleural cavity, would suggest that the recurrent pneumothoraces in the case reported here were the result of erosion and perforation of the right diaphragmatic leaf by endometrial implant and the passage of air from the uterus by way of the fallopian tubes into the peritoneal cavity and then by way of the opening in the diaphragm into the pleural cavity, with consequent pneumothorax. Although we are unable to find any reports of spontaneous pneumoperitoneum occurring during the menstrual cycle, the practical possibility of this is suggested by the free anatomic communication between the cavity of the uterus with the peritoneal space by way of the fallopian tubes. Practical application of this knowledge is regularly used in the so-called Rubin test for patency of the tubes. During this procedure, carbon dioxide is passed into the uterus and then by way of the tubes into the peritoneal cavity. During the test, patients may experience shoulder pain and present roentgenographic evidence of pneumoperitoneum.

Summary

Chronic recurring pneumothoraces resulting from erosion of the diaphragm by endometrial implants during periods of menstruation occurred in a young woman. This was surgically corrected by excision of the involved portion of the diaphragm. The unanticipated findings encountered at operation in this patient present an additional indication for exploratory thoracotomy in all cases of unexplained, constantly recurring, spontaneous pneumothorax.

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References

1. (*a*) Novak, E., and Novak, E. R.: Textbook of Gynecology, ed. 5, Baltimore, Williams & Wilkins Co., 1956, p. 546. (*b*) Nunn, L. L.: Endometrioma of Thigh, Northwest Med. **48:**474-475 (July) 1949. (*c*) Hartz, P. H.: Occurrence of Decidua-Like Tissue in Lung: Report of Case, Am. J. Clin. Path. **26:**48-51 (Jan.) 1956. (*d*) Hobbs, J. E., and Bortnick, A. R.: Endometriosis of Lungs: Experimental and Clinical Study, Am. J. Obst. & Gynec. **4:**832-843 (Nov.) 1940. (*e*) Nicholson, H.: Endometriosis of Pleura, Thorax **6:**75-81 (March) 1951.

2. Sampson, J. A.: Perforating Hemorrhagic (Chocolate) Cysts of Ovary, Arch. Surg. **3:**245-323 (Sept.) 1921.

THE FUNCTION OF THE BRAIN.—Any biological view of the function of the brain leads us to an unavoidable conclusion: consciousness is not unique to man, to the primates, or to the mammals: it goes back to the roots of vertebrate history and has been progressively elaborated in content, coloring and complexity roughly in proportion to the evolution of the neuromuscular system. It cannot even be argued that consciousness is a unique vertebrate invention—the crab, the octopus, the butterfly, the ant, all possess sensory devices imparting to them the awareness of their world; all demonstrably engage in integrated time-binding, self-serving action, and it must be presumed that all participate in some proportional measures in conscious awareness of themselves and their environment.—H. W. Smith, The Philosophic Limitations of Physiology, Perspectives in Physiology, Washington, D. C., American Physiological Society, 1954.

CHRONIC RECURRING SPONTANEOUS PNEUMOTHORAX DUE TO ENDOMETRIOSIS OF THE DIAPHRAGM

Elmer R. Maurer, M.D., James A. Schaal, M.D.
and
F. L. Mendez Jr., M.D., Cincinnati

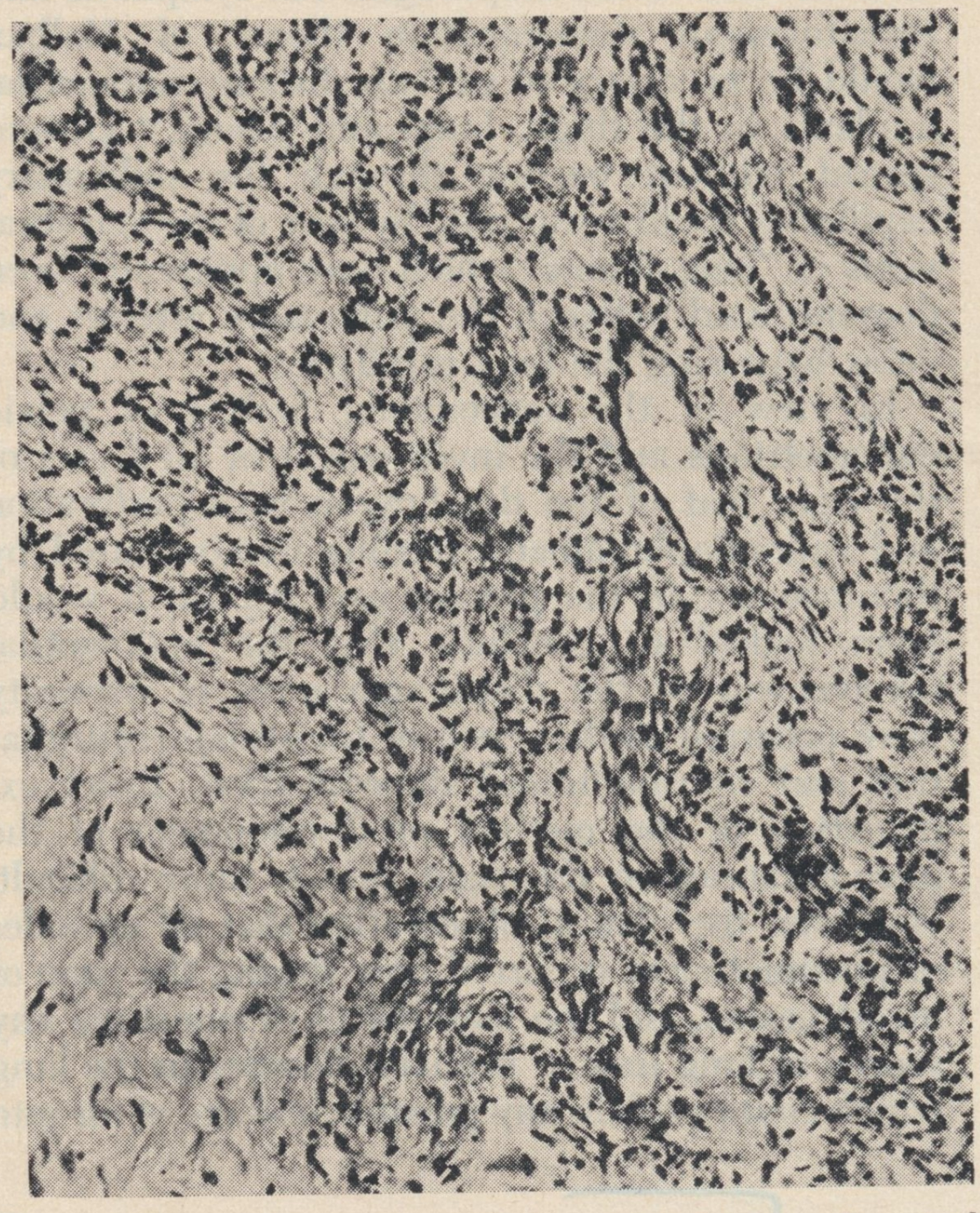
Chronic recurring spontaneous pneumothorax is a relatively common disorder which usually results from rupture of subpleural blebs. Endometriosis of the diaphragm, on the other hand, is an exceedingly rare lesion and, as nearly as can be determined, has never been reported in association with, or as a cause of, unilateral recurring pneumothorax.

The following case report is presented because of the extreme rarity of the lesion involved and the unusual association of pneumothorax with the menstrual cycle. It is the first recorded instance of successful surgical treatment of chronic recurring pneumothorax by excision of a defect in the diaphragm that has resulted from endometriosis.

Report of a Case

A 35-year-old woman was first seen in consultation on March 13, 1953, because of pain and dyspnea resulting from a spontaneous pneumothorax on the right side. The patient had had two previous spontaneous pneumothoraces on the right, the first having occurred on Nov. 14, 1952. Findings on the general physical examination were negative except for distant breath sounds over the upper right part of the chest and hyperresonance of the percussion note due to a pneumothorax. Roentgenograms of the chest revealed a very minimal pneumothorax (15%) over the extreme apex and the base of the right lung. No emphysematous blebs were apparent in any portion of either lung. Because of the small quantity of air in the chest and the absence of serious symptoms, removal of the air by thoracentesis or tube thoracostomy was not thought to be indicated. The patient was discharged from the hospital for follow-up care by her attending physician. She was again seen in consultation on March 20, 1954, approximately one year after the original examination, because of 12 new episodes of recurrent pneumothorax on the right side. All pneumothoraces were associated with pain and mild dyspnea and had been verified by roentgenographic examination of the chest. For the first time, the patient volunteered the information that all 15 episodes of spontaneous pneumothorax had come during the period of menstruation. The important clinical significance of this observation was not appreciated at the time. Because of the chronicity of the lesion, open thoracotomy with possible talc poudrage and excision of any blebs that may not have been apparent on roentgenographic examination was recommended.

Right thoracotomy on March 31, 1954, revealed a persistent moderate pneumothorax on the right side. Careful examination of all lobes of the right lung revealed no evidence of blebs. Testing of the lung with positive pressure, while saline solution was dripped over the surface, disclosed no points of air-leak. The lung parenchyma grossly presented a normal appearance and consistency. The most remarkable finding involved the right diaphragm. Near the point of emergence of the inferior vena cava and extending radially and laterally in the central portion of the right leaf of the diaphragm was a circumscribed, oval-shaped area of attenuation which measured 4 by 3 cm. in diameter. Numerous purplish-red nodulations were apparent on this surface. In the central portion of the diseased area in the diaphragm was an aperture 2 cm. in diameter. This communicated freely with the peritoneal cavity. The area of disease in the diaphragm, along with the defect, was widely and completely excised. The consequent diaphragmatic opening was repaired with interrupted mattress sutures of cotton, size 0. Examination of the specimen showed that the disease had involved the complete thickness of the diaphragm. Final inspection of the superior surface of the diaphragm revealed a solitary purplish-red nodule, 1 cm. in diameter, which obviously represented a supradiaphragmatic endometrial implant. This also was completely excised. Following reexpansion of the lung and the placement of an intrapleural catheter for water seal drainage, the chest wall was closed in layers. The postoperative diagnosis was endometriosis of the right leaf of the diaphragm resulting in perforation and implant of endometrial nodules on the intrathoracic surface of the diaphragm. Microscopic examination of the surgical specimen showed extensive involvement of the fibromuscular stroma of the diaphragm by nests of endometrial stroma and glands (see figure). The single nodule on the supradiaphragmatic surface was composed of endometrial tissue.



Photomicrograph of excised lesion, showing endometrial stroma and glands extending through fibromuscular structure of diaphragm.

The postoperative course of the patient was entirely uneventful, and she was discharged from the hospital on her ninth postoperative day, being afebrile and ambulant, and with her right lung completely expanded.

Because of pain in the pelvis and dysmenorrhea, the patient was seen by a gynecologic consultant. Bimanual exam-