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## SEASICKNESS (Mal-de-Mer)

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One of the first items asked of a Transport Surgeon, when conducting a troop movement overseas, is "What about seasickness? Have you anything for it?" The following observations are from one year's active duty at sea. Also—having experienced it myself, I can say, "Than seasickness, there is no greater test of patriotism." At times, death itself seems sweeter.

Seasickness is a functional derangement largely due to unusual stimulation of the semi-circular canals of the ear resulting in faulty interpretations of equilibrium. To begin with, this subject should be truly placed under the heading of preventive medicine. A subnormal intake of food selected from a diet that is best suited to the individual, along with an abundance of rest, sleep, and normal functioning of bowels for twenty-four hours prior to embarkation, are essential. "Everything in moderation" should be the key slogan aboard ship. This includes sudden movements, tensions of any cause (card playing, discussion of politics, etc.), over-indulgence of any type (physical or mental fatigue, food, drink, smoking, etc.). Let the following be particularly noted and considered and again noted: "At the first sign of discomfort, quietly betake thyself, even without drugs, to the cool blowing breezes

of the open deck in a reclining chair, preferably amidships, where the movement of the ship is least. Fresh air, fresh cool blowing air, and more fresh air are of paramount import."

The best working hypothesis to help in rationalizing its treatment is that it consists in an imbalance of the autonomic or vegetative nervous system, whose essential and particular function is maintaining the stability of the internal environment by internal adjustments (the *milieu interne* of Claude Bernard or the *homeostais* spoken of by Cannon). Overexcitation of the vagi results in a disturbance of the psycho-somatic interrelationships of the body. The unaccustomed stimulation of the equilibratory mechanism of the body not counteracted consciously or subconsciously by compensatory swaying of the body or not being permitted to result in corrective muscular responses ("sea legs") is the fundamental cause. Thus paralyzing the effector cells of the vagi nerve endings with drugs of the Atropine series is physiologically in order. While the depressing character of the induced or aggravated vagotonia would contra-indicate a sedative such as bromide, a stimulant such as strychnine could well be employed. Nicotine (possibly in the form of cigarettes) may be considered an ally with Atropine in

that with sufficient quantities its effects on the ganglion cells of the same vagi annul the stimulating action of the parasympathicomimetic drug, identical in action with acetyl choline, liberated at the nerve terminals.

Contributing to, if not causing this autonomic imbalance is an interaction of several factors, one or the other of which may predominate in any one case. First there is the mechanical factor already alluded to. Stimulation of the vertical semicircular canals is considered a most potent cause. Hence, at the onset of symptoms, the prone position is advisable. However, impulses arising in the stomach or retinae are contributory. Excessive amounts of food and drink must be avoided, though patients feel better after getting a little something in their stomachs. Ridding the stomach of accumulated mucous and bile with two to three glasses of hot water with sodium bicarbonate added, or an effervescent alkaline tablet, are very comforting. Visceroptotics will find a tight abdominal binder of prophylactic value. Visual abnormalities must also be corrected and dark glasses used, especially in strong sunlight. Where there is excessive vomiting, sipping cold ginger ale and lemonade with sugar (glucose, drams 3) often dispels nausea. If not retained, glucose sodium chloride retention enemata should be administered (alcohol 50%, ounces 1/2; corn syrup, ounces 1, normal saline to make ounces 8). Seldom

does intravenous therapy and morphine have to be resorted to or the acidotic state reached. Finally, the psychic factor must not be overlooked. Will power, maintaining a "stiff upper lip" and keeping one's mind busy are essential to success.

#### SUMMARY

1. Essentials in prophylaxis are: "*Omnes in Moderatio*" before sailing and aboard ship; fresh air, cool blowing air, and more fresh air; the cumulative effect of several inadequate causes may induce seasickness.

2. Therapy resolves itself into neutralizing the vagotoni by the atropine drug series; strychnine is used to overcome depression; measures to avoid acidosis and counteract it if present; symptomatic therapy; in general treat the patient and the illness will take care of itself.

3. An interaction of several factors, namely, the nervous, the mental, the mechanical, the gastric, and the retinal, any of which may predominate in any one case, is a contributory cause.

4. Specific suggestions and measures for incipient and advanced cases are presented.

#### CONCLUSION

1. Prophylaxis of seasickness (mal-de-mer), especially 24 hours before sailing is most important.

2. Physiologically — atropine, strychnine and some form of nicotine should be of value in counteracting the excessive vagus stimu-

lation. A disturbance of the psycho-somatic interrelationships of the body is advanced as a causative working hypothesis.

3. "Sea legs" can be acquired. However, there is a very small percentage of patients who would

require superhuman, herculean efforts to overcome mal-de-mer and for practical purposes never will.

## BIBLIOGRAPHY

*Physiological Basis of Medical Practice*; Best & Taylor.

## American Doctors Heroes of Tunisia

The medical unit closest to the enemy line is a battalion aid station usually found about 1,000 yards behind the front, but it is often closer, tucked away in the most sheltered spot available. And, in a barren land like this part of Tunisia, there are not many sheltered spots.

The operation truck is an ordinary two-and-a-half-ton Army truck in which a small but excellently equipped room is set up. The injured are carried directly from the field to the truck, where the doctor is prepared to do anything from dressing a bullet wound in the leg to performing brain surgery. There are no nurses at these advanced units and assistance to the doctor is supplied from the enlisted ranks.

Captain Armand Devittorio of Ridgway, Pa., a treatment station commander, said that many lives had been saved in the operating rooms near the front.

"Each truck has lights and stretcher racks on either side also, so three operations can be performed from it simultaneously," he said. "Once we worked thirteen hours on end and handled fifty-

seven operations on our two trucks."

Injections of blood plasma, ample applications of sulfa drugs and seeing that the patients are well covered in blankets are the usual way of dealing with shock, a common battlefield ailment. After treatment, the patients are put in the ward tent until they can be transported to hospitals. Many cases are flown back to base hospital by transport planes.

Captain Robert Beaudet of Franklin, N. H., an operating-truck surgeon, said that his staff was proud because it had not yet had to perform an amputation.

"Today we had a major brought in with his feet shattered when his jeep hit a mine, but we feel confident he will be able to walk again," Captain Beaudet said. "The courage and cheerfulness of the American wounded is remarkable. They never whimper, and tell us to do anything we want just so they will be able to get well quickly.

"A place like this is where morale really shows up. Believe me, these American kids have got all the guts anybody can ask."