of a typical exophthalmic goiter having ever been produced or ever existed of itself in the lower animals. There is something else in man, the emotional side or some other factor, that makes goiter sometimes different from the goiter occurring in animals.

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Peritoneal Lavage. Effective Elimination of Nitrogenous Wastes in the Absence of Kidney Function.

SIDNEY BLISS, ARTHUR O. KASTLER AND S. B. NADLER.

From the Department of Biochemistry, Tulane School of Medicine.

The experiments of one of us have demonstrated that nephrectomized dogs eliminate considerable amounts of ammonia in vomiting. These results have been amply confirmed and extended by others. Martin has studied the elimination of ammonia, urea and other nitrogenous wastes lost in this manner.

During a similar study on elimination of both urea and ammonia in the vomitus, we have demonstrated that really considerable quantities of urea and ammonia are thus eliminated. However, the prospect of this method of elimination serving as a therapeutic measure to tide patients over temporary periods of deficiency in kidney function is not bright. Elimination by way of the stomach becomes quantitatively important only when nitrogen retention has reached a very serious stage, and in our hands this mode of excretion has always failed to keep pace with nitrogen accumulation.

During the course of these experiments we encountered edema of massive proportions. The ascitic fluid in these cases was found to be rich in urea and practically in equilibrium with the concentration of that substance in blood.

We have been able to accomplish the elimination of nitrogen wastes by the introduction of a solution of balanced salts into the peritoneal cavity of a nephrectomized dog, allowing time (10 minutes) for diffusion of nitrogenous wastes into this fluid, and then drawing off the fluid through the trocar which remains in position throughout. We introduce on the average 750 cc. of solution, allow it to remain in the peritoneal cavity for 10 minutes and then allow it to flow out by gravity. Varying numbers of such washings are made at a single insertion of the trocar. Depending upon the severity of the retention at the time, we have done as few as 5 and as

many as 20 washings at one sitting. The relief of nitrogen retention is prompt and dramatic. The plasma value has been reduced from 160 mg. to 80 mg. per 100 cc. within 3 hours. The survival period of untreated dogs is about 3 days, while with peritoneal lavage we have had survival periods of 13 and 16 days.

The therapeutic possibilities are at present under investigation here. Our studies on kidney-functionless dogs have included one dog anuric with uranium nephritis, one dog with one kidney removed and the other ureter ligated, and 5 doubly nephrectomized dogs.

TABLE I.
Control of Plasma Non-protein Nitrogen by Peritoneal Lavage.

Dog No.	Plasma Non-prot. N.		Non-protein N. of Lavage Fluid		Remarks
	Before lavage	After lavage	Conc.	Amt.	
	mg. %	mg. %	mg. %	gm.	
2	156	141	101	4.0	double nephrectomy
3	140	103	68	5.4	
	107	94	60	4.9	
	159	95	68	6.8	
	212	110	31	3.2	
	182	79	70	6.2	double nephrectomy
	144	96	70	5.8	
	135	120	48	2.1	
	182	80	67	8.4	
	142	80	58	5.5	
	104	57	44	3.7	
	106	56	29	5.6	
4	76	54	19	1.8	
5	46	45	13	1.6	
	133	68	36	3.1	
	162	102	48	4.1	
	138	62	62	6.9	double nephrectomy
	190	75	75	6.6	
	120	82	44	4.0	
6	191	110	62	5.2	
	267	148	65	5.1	anuric: uranium nephritis
	230	143	72	6.7	
7	250	124	74	9.9	left kidney removed right ureter ligated
8	143	96	47	3.6	
	160	86	48	3.7	double nephrectomy

The washings from the peritoneal cavity have been examined for the presence of the ordinary urinary constituents. We have identified phosphates, creatinin, urochrome, urea, sulfates, chlorides (in excess of the amount in the wash fluid) and traces of protein.