

In the same 4 dogs in a corresponding part of the left internal oblique muscle a 3 cm. segment of the ureter, not split but left in its original tube form was sutured. The ends were not ligated. Examination 35, 42, 62 and 79 days later showed (1) the ends of the transplant had closed, (2) the lumen of the transplant contained a small quantity (0.5-1.0 ccm.) of cloudy fluid, (3) bone had not formed around the transplant.

Histological examination showed the transplant lined with transitional epithelium; a rather large amount of smooth muscle of the ureteral wall has survived the transplantation.

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Effect of Calcium Chloride Injections on the Blood Sugar of Normal and Jaundiced Dogs.*

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The complicated interrelationship between blood coagulability and its content of calcium and sugar has been the field for much study. Therapy of jaundice by the administration of calcium was popularized by the publications of Walters.¹ Attempts to give these procedures a scientific basis have not always been successful. However, the observations of many clinicians have shown beyond doubt that intravenous injections of calcium chloride are of definite value. More recently the older views have been revived and glucose both by feeding and by injection has become a favorite method of therapy. The experiments of Ravdin² have established the fact that raising the sugar level in the blood is of far more importance in increasing the coagulability than raising the calcium content and this procedure has many enthusiastic advocates.

Wright and Cowan³ in a recent communication have established the fact that injection of sugar in both normal and jaundiced dogs produces a significant rise in the blood calcium and that this rise persists after the blood sugar has returned to normal levels and that the

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¹ Walters, W., *Minnesota Med.*, 1925, **6**, 203.

² Ravdin, I. S., *et al.*, *Annals Surg.*, 1930, **91**, 801.

³ Wright, H. N., and Cowan, D. W., *loc. cit.*, 1930, **27**, 950.

coagulability of the blood parallels the calcium level and not the sugar curve. With these points in view it was decided to ascertain the effect on the blood sugar level of calcium injection and as can be seen from the accompanying table the rise in blood sugar after calcium injection is nearly as marked as after injecting sugar itself and tends to last longer. The average rise in blood sugar is 62 mg. per 100 cc. or about 70%.

TABLE I.
Effect of CaCl_2 injection of blood sugar.

Time hrs.	Jaundiced Dogs										Normals		
	1	2	3	4	5	6	7	8	9	10			
0	92	103	93	84	101	89	75	99	103	184	122	105	125
½	109	117		104	123	92	136	118	119	149	170	127	145
1	105	111		119	134	102	155	156	158	200	160	136	138
1½	122	120	112	145	148	107	181	176	178	184	142	123	128
2	134	124	170	143	189	115	187	178	172	238	175	132	175
2½	149	110		163	198	108	176	167	167	280	156	120	155
3	120	101		151	191	103	183	164	200	280	193	118	125
4	122	111	156	129	150	187					140	140	140
5		110	92								126	108	137
6		92	92	98	107	95							
8	99												
24		100				89							

1. Cholecystectomy and common duct ligation 7 days P. O. Wt. 12.5 k. 10 cc. 10% CaCl_2 .
 2. Same dog. 9 days P. O. 15 cc. 10% CaCl_2 .
 3. Same procedure. 8 days P. O. Wt. 15 K. 15 cc. 10% CaCl_2 .
 4. Same 7 days P. O. 10 cc. 10% CaCl_2 .
 5. Same 10 cc. 10% CaCl_2 .
 6. Same 8 days P. O. 15 cc. 10% CaCl_2 .
 7. Common duct ligation and right nephrectomy. 7 days P. O. 10 cc. 10% CaCl_2 .
 8. Same.
 9. Common duct ligation and double nephrectomy. 2 days P. O. 10 cc. 10% CaCl_2 .
 10. Same.
- Normals. 10 cc. 10% CaCl_2 .

This fact brings us back to where we were before the paper of Wright and Cowan was published. The 2 factors, sugar and calcium, seem to have a reciprocal influence on each other and it is therefore impossible to say which one is of the greater importance in the control of blood coagulability.