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The parathyroids and pregnancy.

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A number of investigators have found, especially in dogs, that pregnancy seems to augment the symptoms of parathyroid tetany, and may transform latent tetany into acute tetany in cases of partial thyroidectomy.¹ The parathyroids must become functional in the fetus a considerable time before birth, because there is no record of parathyroid tetany (acute or latent) in prematurely born infants. In view of the fact that in late pregnancy the pancreas of the fetus seems to be able to compensate for the total extirpation of the pancreas of the mother to such an extent that this operation is not followed by the usual diabetes,² an investigation of the other organs of internal secretion with reference to the passage of the hormones from the blood of the fetus to the blood of the mother seemed desirable. Accordingly, in the spring and summer of 1912, thyroid-parathyroidectomy was made in 16 dogs and 11 cats in late pregnancy, that is, within one to three weeks of term.

RESULTS.

1. *Dogs.*—Eight out of the fifteen dogs died in acute tetany within 12 to 24 hours after the parathyroidectomy. In no case was there evidence of labor. Three dogs developed tetany after 36 hours, one dying in tetany on the third day, and the other two on the fourth day without any signs of labor. Two dogs gave birth to the young on the second day and developed tetany symptoms on the third and fourth days respectively. These two died in tetany and depression on the eighth day.

One dog had moderately strong tetany on the second and third days after the operation. On the 4th and 5th days there was no tetany, but one pup was born on each of these days. The dog died in depression on the 6th day. Five pups were found in the uterus. One of the pups was engaged, but the uterine contractions

¹ The literature is reviewed by Biedl, "Innere Sekretion," 1913, I, p. 83.

² Carlson and Drennan, *Am. Jour. of Physiol.*, 1911, XXVIII, p. 391.

had evidently been too feeble or incoordinated for the delivery. Two dogs showed no signs of tetany at any time, one of the dogs giving birth to the young on the 6th day, and the other on the 9th day following the parathyroidectomy. Three weeks later the dogs were killed and a search made for accessory parathyroids; none were found.

The development of acute and fatal tetany within 24 hours after parathyroidectomy is very exceptional in male and non-pregnant female dogs. It does occur, however, especially after hemorrhage or prolonged anaesthesia. It would therefore seem that late pregnancy in dogs accelerates and intensifies the parathyroid tetany in the majority of cases. This may, however, be only an addition effect (latent eclampsia + parathyroid tetany).

2. *Cats*.—Ten out of the eleven pregnant cats developed fatal tetany. The slight difference between pregnant and non-pregnant cats is shown by the following comparison:

		Parathyroid tetany; average figures for:	
		20 males and non-pregnant females.	20 females in late pregnancy.
First tetany symptoms	Maximum	72 hours	48 hours
	Minimum	5 hours	24 hours
	Average	28 hours	30 hours
Death	Maximum	168 hours	175 hours
	Minimum	24 hours	75 hours
	Average	78 hours	120 hours

It is obvious that advanced pregnancy in cats does not accelerate or intensify the symptoms of parathyroid tetany. On the contrary the pregnant cats live a little longer and the excitation symptoms are less severe than in the case of the non-pregnant controls. But the depression seemed greater in the pregnant animals. If the fetal parathyroids are in any way capable of functioning for the mother, this action is so slight that it cannot be demonstrated on the present short series of experimental animals.

It is premature to speculate on the cause of the above difference in the relation of pregnancy to parathyroids in cats and dogs before more data are at hand on other species.