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#3

Absorption of Pellets of Progesterone

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PROGESTERONE is utilized effectively by the body when administered intramuscularly in oily solution, when applied sublingually in the form of hard, easily soluble tablets (1, 2) or when implanted subcutaneously as compressed cylindrical pellets. The latter method presents clinical possibilities which have not been exploited (3) and it seemed advisable at this time to record our data on the absorption rates in humans of pure crystalline progesterone pellets.

In 1938 Deanesly and Parkes (4) reported their results of implantation into rabbits of progesterone tablets 5.1 mg. in weight. Five days after implantation they found full progesterone effect in the uterus of the immature animal which had been sensitized with estrone previously. Lipshütz and Maas (5) gave further proof to the effective utilization of subcutaneously implanted progesterone pellets. Regression of abdominal and uterine fibroids, produced in the female guinea pig by estrogens, was obtained when a tablet of synthetic progesterone was implanted.

MATERIAL AND METHODS

Pure crystalline progesterone pellets were employed.[2] These were machine-made under aseptic conditions and supplied by one manufacturer. The pellets were cylindrical in shape and were prepared in three weights, *i.e.*, 50, 150 and 200 milligrams. The pellets were smooth, yellowish white in color and all of approximately the same density. On recovery the pellets showed slight roughening of the surfaces and a more or less uniform shrinkage in the original shape. The pellets were implanted subcuntaneously in the inguinal region by the following method: the skin was anaesthetized by injection of a few cubic centimeters of two per cent procaine intradermally so as to raise a wheal. A small incision, no larger than one centimeter, was made over the wheal through the skin, exposing the subcutaneous fat. A hemostat was inserted through the incision in the direction of the inguinal canal for a distance of several centimeters. The pellet was then inserted with the hemostat into the preformed groove. The incision was covered with a sterile pad. Healing took place within a few days. Data on the rate of absorption were obtained on fourteen pellets after remaining *in situ* from 35 to 166 days (see accompanying table). The pellets were recovered after surgical removal or when expelled from the wound. The pellets were easily cleaned, dried and reweighed. The nine 50-milligram-sized pellets showed for the greater part that close to 20 per cent absorption per month had occurred (see accompanying figure). The results paralleled those obtained by Warwick and Parkes (6) for 50-milligram pellets implanted in the experimental animal. Ten of the 14 pellets recovered, regardless of size, showed an absorption rate of between 18 and 24.6 per cent per month. It appeared that the rate of absorption was fairly uniform for the first three to four months and then tapered off. This finding paralleled our results with pellets of testosterone propionate (7).

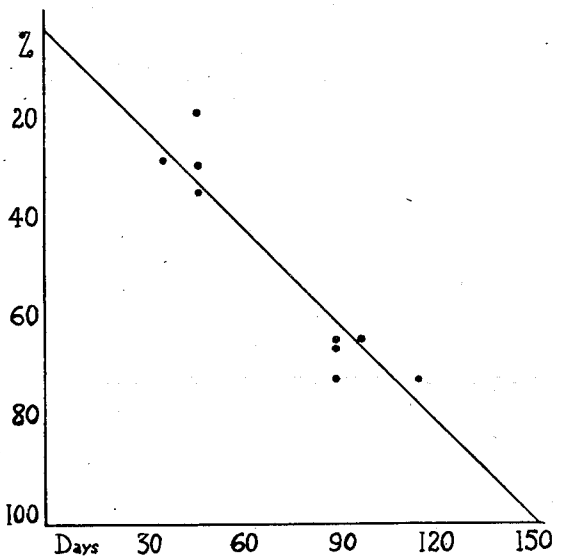
The only available data on the rates of progesterone pellet absorption were provided

[1] This work was completed before the entrance of the senior author into the service. Present address: U. S. Public Health Service.

[2] The pellets of Progesterone used in this study were prepared by Schering Corporation, Bloomfield, New Jersey.

Patient No.	Pellets	Wt. of Pellets		Days in Situ	Per Cent Absorption	Per Cent Absorbed per Month	Per Cent Absorbed per Day	Diagnosis
		Original	On recovery					
1	1	50	36.7	35	26.6	22.8	0.38 mg.	Nervous tension state
	2	50	18.7	95	62.6	19.8	0.33 mg.	
2	1	50	33.2	46	33.6	21.6	0.36 mg.	Habitual abortion
	2	50	36.0	46	28.0	18.0	0.30 mg.	
	3	50	41.2	46	17.6	11.4	0.19 mg.	
3	1	50	13.6	88	72.8	24.6	0.41 mg.	Dysmenorrhea
	2	50	17.7	88	64.6	22.2	0.37 mg.	
	3	50	18.3	88	63.4	21.6	0.36 mg.	
	4	50	14.3	113	71.5	18.6	0.31 mg.	
4	1	200	93.3	166	53.4	9.4	0.63 mg.	Puberal breast hypertrophy
	2	200	91.9	166	54.0	9.7	0.65 mg.	
5	1	150	82.5	73	45.0	18.4	0.92 mg.	Habitual abortion
	2	150	77.0	73	48.6	20.0	1.00 mg.	
6	1	150	67.7	49	54.8	33.4	1.67 mg.	Puberal breast hypertrophy

by Forbes (8) and by Warwick and Parkes (6). The latter concluded that progesterone is absorbed from large tablets implanted subcutaneously at an average rate of about 20 per cent per month. Tablets weighing 50 milligrams thus supply about ten milligrams per month. This conclusion was obtained from pellets recovered from ten goats, six guinea pigs, two rats and one woman. Percentage absorption per month varied from 8.2 to 27.5 for the 19 pellets which they recovered after remaining *in situ* from 30 to 140 days. The pellets weighed from 30 to 85 milligrams originally. Forbes (8) found that it required 88 days for 90 per cent absorption of progesterone pellets implanted in rats while for anhydrohydroxyprogesterone pellets less than 30 per cent absorption occurred in 300 days.



Percentage absorption of nine pellets of 50-mg. size plotted against the line suggested by Warwick and Parkes, *i.e.* of 20% absorption per month.

SUMMARY

Data on the absorption rates of pellets of progesterone subcutaneously implanted in humans were obtained in 14 instances. The pellets were of three sizes, 50, 150 and 200 milligrams.

Of the recovered pellets, nine were of the 50-milligram size, three of the 150-milligram size and two of 200-milligram size. The pellets remained *in situ* from 35 to 166 days.

Ten of the 14 pellets recovered showed that there occurred on the average about 20 per cent absorption per month for the first 3 to 4 months.

REFERENCES

1. GREENBLATT, R. B.: *J. Clin. Endocrinol.* 4: 156. 1944 and 4: 321. 1944.
2. COMER, G. W., JR.: *Am. J. Obst. & Gynec.* 47: 670. 1944.
3. MISHELL, D. R.: *Am. J. Obst. & Gynec.* 41: 687. 1941.
4. DEANESLY, R., AND A. S. PARKES: *Lancet* 2: 606. 1938.
5. LIPSCHÜTZ, A., AND M. MAAS: *Cancer Research* 4: 18. 1944.
6. WARWICK, M. H., AND A. S. PARKES: *Lancet* 1: 406. 1940.
7. GREENBLATT, R. B., AND L. Q. HAIR: *J. Clin. Endocrinol.* 2: 315. 1942.
8. FORBES, T. B.: *Endocrinol.* 32: 282. 1943.