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| Abstract | Embryos of the normal Swiss white mice were employed in this investigation. Studies were performed by microdissection of normal mouse embryos from 10 to 12 days of gestational age showed that there were renal rudiments undifferentiated morphologically.

At 14 days gestation, the normal embryonic kidney begins to differentiate morphologically and actively. Therefore, for this investigation, normal embryonic kidneys at 14,17, and 18 days gestation were selected in order to study kidney glomeruli histologically and quantitatively.

Two methods of producing the histological sections of these normal embryonic kidneys were used. The first method was the production of four paraffin sections from each of the two normal embryonic kidneys at 14 and 18 days gestation. The second method was the production of plastic serial sections from each of the three normal embryonic kidneys at 17 days gestation. The first normal embryonic kidney comprised the first group which included 25 slides of sections, the second normal embryonic kidney comprised the second group which included 17 slides of sections, and the third normal embryonic kidney comprised the third group which included 18 slides of sections.

In the histological study, all the paraffin and plastic serial sections of the three gestational ages which have been examined by light microscope showed no particular differences in the structures among kidney glomeruli. In addition, they acquire round or oval shapes. The glomerulus is surrounded by the Bowman's capsule which consists of two epithelial layers, external called parietal layer, and internal called visceral layer. There were epithelial cells located in the visceral layer of the Bowman's capsule called podocytes. There were also both proximal and distal convoluted tubules which were distinguished by several characteristics.

In the quantitative study, the four paraffin sections for each of the two normal embryonic kidneys at 14 and 18 days gestation were measured. The following slides which belong to the three normal embryonic kidneys at 17 days gestation |

were selected for measuring its plastic serial sections:-

1- The 3rd, 6th, 9th, 12th, 15th, 18th, 21st, and 24th (belong to the first normal embryonic kidney).

2- The 3rd, 6th, 9th, 12th, and 15th (belong to the second normal embryonic kidney).

3- The 3rd, 6th, 9th, 12th, 15th, and 18th (belong to the third normal embryonic kidney).

The diameter of the kidney glomerulus was measured with an ocular micrometer (eyepiece graticule). The glomerular surface area and volume were computed from the mean of glomerular diameters , assuming sphericity of the glomerulus. The actual number of glomeruli for each paraffin section of the embryonic kidneys at 14 and 18 days gestation was estimated independently (every gomerulus enclosed in Bowman's capsule was counted) because these sections were not serial. The actual number of glomeruli for each of the three groups of plastic serial sections of the three embryonic kidneys at 17 days gestation was estimated by coounting the total number of frequent glomeruli for each kidney and divided by the number of frequency for each glomerulus.

The results showed that in the four paraffin sections of normal embryonic kidney at 14 days gestation, the minimum value of the mean of glomerular diameter was (33.75 SD 7.739 μm), and the maximum value was (38.541 SD 8.853 μm). Mean of glomerular surface area was between (3.5766559-4.664183 X 10^3μm^2), mean of glomerular volume was between (19.615723-29.21137 X 10^3μm^3).

In the three normal embryonic kidneys in 17 days gestation, the results showed that in the first selected slides of plastic serial sections of the first group which belong to the first normal embryonic kidney, the minimum value of the mean of glomerular diameter was (38.5 SD 8.3694 μm), and the maximum value was (44.5 SD 13.32μm). Mean of glomerular surface area was between (4.654265-6.217985 X 10^3μm^2), mean of glomerular volume was between (29.118245-44.9638 X 10^3 μm^3), and the actual number of glomeruli for this kidney was 238.69407.

In the selected slides of plastic serial sections of the second group which belong to the second normal embryonic kidney, the minimum value of the mean of glomerular diameter was (40.55 SD 7.508μm), and the maximum value was (43.5 SD 7.737μm). Mean of glomerular surface area was between (5.1631095-5.941 665 X 10^3μm^2), mean of glomerular volume was between (34.021665-42.000142 X10^3μm^3), and the actual number of glomeruli for this kidney was 250.17972.

In the selected slides of plastic serial sections of the third group which belong to the third normal embryonic kidney, the minimum value of the mean of glomerular diameter was (39.525 SD7.989μm), and the maximum value was (42.925 SD 7.8393μm). Mean of glomerular surface area was between (4.9053 883-5.7856 245 X 10^3μm^2), mean of glomerular volume was between (31.506389-40.3 5 6538X10^3μm^3), and the actual number of glomeruli for this kidney was 263.00059.

In the four paraffin sections of normal embryonic kidney at 18 days gestation, the minimum value of the mean of glomerular diameter was (42.5 SD 2.853μm), and the maximum value was (47.5 SD 2.531 μm). Mean of glomerular surface area was between (5.671625-7.084625X10^3μm^2), mean of glomerular volume was between (39.169659-54.684446 X10^3μm^3).

The statistical analysis of the data obtained in this investigation was carried out by

	using F-test for the means of glomerular diameters of the normal embryonic kidneys at 14, 17, and 18 days gestation. F values showed that there were no significant differences among them.