

strumæ lipomatodes aberratæ renis. Since then they have been variously attributed to the epithelium of the renal tubules (adenomata), and to the endothelium of the perivascular lymph spaces (angiosarcoma and endothelioma). The embryological origin of the adrenal cortex has been described by Weldon (2) as from the Wolffian bodies, which enclose blood vessels and nerves, or from the protonephros, in which case they would be epithelial (3). Balfour, Mitsukuri and Minot derive adrenals from a "mesenchymal anlage," the mesothelium on each side of vena cava forming twisted cords, separated by blood vessels, and from a sympathetic anlage of cells from sympathetic ganglia. These anlagen unite closely (4). Creighton and Arnold consider the distinction between the cortex and medulla as arbitrary and the differences observed as produced by modification in the arrangement of compact parts, there being no real difference between the cells. At about the sixth month there is no special distinction between the cortex and medulla of embryonic human adrenal (5).*

Thus, although the medullary substance of the adrenal appears to be intimately related to the sympathetic nervous system, the entire organ is part of the urogenital apparatus in origin (6).

The presence of adrenal rests or supernumerary adrenals in urogenitary tract is stated by Bayard Holmes to be found in 90 per cent. of all post-mortems (7). R. Williams finds 1 primary adrenal growth in 8,378 consecutive cases of malignant disease. It is known that the suprarenal body is continuous with the front part of Wolffian body (Weldon, Tanosik, Lochwood) even to late intrauterine life, and may be derived from the front of the Wolffian body (the latter extends from lower end of adrenal along ureter to ovary or epididymis). Lochwood points out that at seventh week in human embryo the suprarenal body is larger than the kidney and extends by its lower end downwards in front and to inner side of kidney, occupies the hilum of the kidney and is continuous along the course of the ureter with upper end of Wolffian body. The glomeruli of the Wolffian body are also continued into lower end of suprarenal body (8). Though oftenest found in the connective tissue about the main adrenals, Morris states that bodies identical in structure with suprarenal capsule are found in cortex of kidney, in perinephric tissue, in mesentery and be-

* Good descriptions of the microscopical characters of these growths are given by Hektoen and Riesman, by McWeeny. Mallory and Southard describe the pathological characters in cases of Thorndike and Cunningham; also Boyd and McFarland.