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| **Histological study of the constituents that related to the immune defensive mechanism in the vagina of ewes** | Research Title  |
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| In order to study the vaginal defensive mechanisms in ewes, vaginal smears and biopsies were collected from eight adult Awasi ewes. The biopsies samples were processed by the routine histological methods and stained by H & E and PAS stains, while the smears samples were stained with MB. Samples were examined under light microscope. The resent study revealed that the vaginal wall lacks many important constituents, among these were the vaginal glands, goblet cells, muscularis mucosa and lymphatic nodules. And as the vagina was the nearest organ to the external environment and as it receives the male copulatory organ, so it is more liable organ to be infected by external pathogens. On the contrary, the vagina has special compensatory histological mechanisms i: e, its epithelium was thrown into deep folds which serve to increase the surface area and in turn raise the epithelial efficiency. The study suggested that these folds were a remnants formed as a result of a failure during embryonic development of the glands as the gland formed by invagination of the epithelium. Moreover, the vaginal wall had a thick basement membrane. It appeared segmented due to accumulation of the defensive cells on some parts of it during their migration from the blood vessels to the epithelium. Besides, the vagina contained a great numbers of defensive cells, such as neutrophils, macrophages, lymphocytes, plasma cells and mast cells. In spite of the relation of dendritic cells with immune defense, this study couldn't recognize them by using only the general stains. On the other hand, the vaginal smears demonstrated that the vagina had many defensive cellular mechanisms among these, the process of keratinization of the vaginal epithelium; the process of sheet formation which lining the vaginal lumen; the presence of apparent junctional complexes which coalesce the cells of the sheet formation. These junctional complexes close completely the intercellular spaces leading to prevent any entrance of any foreign materials and pathogens to the underlying tissue. Some vaginal cells showed a pale foamy (vacuolated) appearance. Vacuolation was another defensive phenomena, it was indicative of increase cellular activity. Moreover, the recent study reported the process of metachromasia which is associated with cellular activity in protein synthesis, keratin, finally this study referred to the important of endogenous microorganisms which act to convert the cellular epithelial glycogen into lactic acid. The latter act to decrease the pH of the vaginal lumen and prevent the pathogenic bacteria from proliferation in the acidic environment.It is concluded that all the above cellular constituents and mechanisms support the vagina with an adequate adaptation enable it to raise its immune defensive response. | Abstract |