

SUMMARY

The present work was conducted to study the local effect of platelet activating factor on the middle ear of experimental animals and to compare this effect with that induced by Eustachian tube obstruction. The study was conducted on 30 albino non lined rats 10 of which served as control and the other 20 animals were divided into two groups. In the first and second groups, platelet activating factor in a dose of 16 μ g was injected in the right hypotympanic bullae while the Eustachian tube was obstructed on the left side. The electron-microscopic changes of the mucoperiosteal lining of the first group were studied after 2 days and that of the second group were studied after 2 weeks.

All the animals injected with platelet activating factor in their middle ear developed otitis media with effusion after 2 days. The middle ear mucosa exhibited subepithelial haemorrhagic foci hyperaemia, oedema and leucocytic infiltration and beginning of osteogenesis was observed. A degree of inflammation was elicited in all operated ears.

Two days after Eustachian tube obstruction, the epithelium showed nearly the same changes following platelet activating factor injection but the epithelium remained flat. No

inflammatory cellular infiltration was seen and signs of fibrosis could not be detected.

Two weeks of platelet activating factor injection, the same changes seen after 2 days were also seen but were mild. Marked presence of some megakaryocytes was evident. The presence of neo-osteogenesis was detected by the presence of modified fibroblasts in their way to be changed into osteoblasts and osteocytes. The later change was clear 2 weeks after Eustachian tube obstruction. Stratification and hyperplasia of the epithelium were clearly seen 2 weeks after Eustachian tube obstruction. However the infiltration with macrophages, plasma cells and PNL were not clearly seen following Eustachian tube obstruction and whenever seen they were not to the same extent described in cases of platelet activating factor injection.

Therefore it could be suggested that the pathogenesis of otitis media with effusion involves a complex interaction of many factors and it seems that the release of various mediators may follow Eustachian tube obstruction, allergy and infection.

CONCLUSION

- 1- It could be concluded that rats are excellent models to study the various aspects of pathogenesis of otitis media with effusion.
- 2- Platelet activating factor plays an important role in the pathogenesis of otitis media with effusion.
- 3- Platelet activating factor in a dose of 16 µg can induce otitis media with effusion by direct injection in the middle ear of experimental animals. The effect of platelet activating factor is marked after a few days and can last for 14 days but the effect becomes less marked.
- 4- The histologic changes in ME mucosa following (PAF) injection are remarkably similar to those induced by Eustachian tube obstruction but not all signs of inflammation accompanying platelet activating factor injection could be seen in cases following Eustachian tube obstruction.