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Pediculosis Capitis

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Introduction

Pediculosis capitis, commonly known as head lice infestation, is a parasitic condition affecting the scalp and neck, primarily caused by the head louse, Pediculus humanus var capitis. This condition is prevalent worldwide, particularly among school-aged children, although individuals of any age can be affected. Despite its prevalence, pediculosis capitis does not discriminate based on social class.

Transmission of head lice occurs through direct head-to-head contact or by sharing personal items such as hats, caps, brushes, and combs. Epidemics of pediculosis capitis can occur in schools, making it a significant public health concern.

Clinical evaluation of pediculosis capitis involves identifying the presence of head lice and their eggs (nits) on the hair and scalp. Nits are small, oval, greyish-white capsules firmly attached to the hair shaft, usually near the scalp. Infestations are often accompanied by excoriations, crusts, and secondary impetiginized lesions, which can mask the presence of lice and nits.

Definition/Description: Pediculosis capitis is an infestation of the scalp by the head louse, which feeds on the scalp and neck and deposits its eggs on the hair.

Epidemiology/Etiology: *Pediculus humanus var capitis* is the causative agent. Pediculosis capitis is more common among school children, especially girls, but all ages may be affected. It does not respect any social class.

Unlike *P. humanus corporis* (the body louse), the head louse is not a vector of infectious diseases. Transmission occurs via shared hats, caps, brushes, and combs, and by direct head-to-head contact. Epidemics may occur in schools.

Clinical evaluation: Head lice may be identified with the naked eye or using a hand lens. Most patients have a population of less than ten head lice. Nits, the parasite's eggs, appear as oval greyish-white egg capsules (1 mm long) firmly cemented to the hairs. They vary in number from only a few to thousands. Head lice deposit nits on the hair shaft as it emerges from the hair follicle. So, with recent infestations, nits are seen near the scalp but with long-standing infestations; nits may be 10–15 cm from the scalp. As scalp hair grows 0.5 mm daily, the presence of nits 15 cm from the scalp surface indicates that the infestation is approximately 9 months old. New viable eggs have a creamy-yellow colour; empty eggshells are white.

Excoriations, crusts, and secondary impetiginized lesions are commonly seen and may extend onto the neck, forehead, face and ears, and mask the presence of lice and nits. In extreme cases, the scalp becomes a confluent, purulent mass of matted hair, lice, nits, crusts, and purulent discharge, so-called plica polonica.

Papular urticaria may be seen on the neck as a reaction to louse bites.

Sites of predilection: Head lice are nearly always confined to the scalp. The occipital and postauricular regions are favourite sites. Head lice may rarely infest the beard or other hairy sites.

Treatment: One of the following preparations may be used:

Carbaryl 0.5% (lotion–shampoo) or malathion 0.5% (lotion–shampoo): The lotion is applied to the scalp for 12 hours followed by shampooing with shampoo containing the same pediculocide. Repeat after 10 days. Unlike carbaryl, malathion has been shown to possess a residual protective effect against reinfection that lasts for about 6 weeks.

Figure 1: *Infected pediculosis capitis. Note the lymph node behind the right ear.*

- Pyrethroids, e.g. tetramethrin 0.3% combined with piperonyl butoxide 3% applied for 1 hour and better left overnight. Repeat on the second day.
- Permethrin 1% rinse (a synthetic pyrethroid) applied to the scalp and washed off after 10 minutes. It is a highly efficacious agent and is much better than gamma benzene hexachloride.
- Gamma benzene hexachloride is applied to the scalp and left for 12 hours, followed by shampooing. Treatment may need to be repeated. It should not be used on pregnant or nursing women. Carbaryl and malathion, the acetyl cholinesterase inhibiting pediculocides, have replaced gamma benzene hexachloride following evidence of the emergence of resistance to organ chlorines.
- Oral cotrimoxazole.
- Ivermectin 3–12 mg stat.
- Remaining nits may be removed using a fine-tooth comb. Patients should be re-evaluated 1 week or 2 weeks after the last pediculocide application; retreatment may be necessary if lice are found or eggs are observed at the hair-skin junction. Affected family members and contacts should be treated. Combs and brushes should be washed.
- Secondary bacterial infection should be treated with appropriate doses of systemic antibiotics, e.g. erythromycin or cloxacillin, before the application of any pediculocide.

Conclusion:

Pediculosis capitis is a common parasitic infestation affecting the scalp and neck, primarily among school-aged children. While it does not pose a serious health threat, it can cause discomfort and embarrassment. Timely diagnosis and treatment are essential to prevent the spread of infestation

Treatment options include pediculicides such as carbaryl, malathion, pyrethroids, permethrin, and ivermectin, which are effective in eliminating head lice. It is also crucial to remove remaining nits using a fine-tooth comb and to treat secondary bacterial infections if present.

Educating individuals about the importance of personal hygiene and avoiding close contact with infested individuals can help prevent the spread of pediculosis capitis. Additionally, regular screening and prompt treatment of

affected individuals and their close contacts are essential to control outbreaks of head lice infestation.

References

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