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Original Research Paper

Dentistry

MATERIALS USED IN DENTISTRY DERIVED FROM ANIMAL SOURCES

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ABSTRACT The use of animal-derived materials in dentistry has a long history dating back to ancient civilizations. Over time, various animal products have been utilized for their medicinal properties and as dental materials. This manuscript provides an overview of the different animals and their derivatives employed in dentistry, highlighting their properties, applications, and potential benefits. Additionally, the ethical considerations and future prospects of utilizing animal-based products in dentistry are discussed.

KEYWORDS :

INTRODUCTION

Dentistry, as a medical field, has evolved significantly over centuries, encompassing various techniques and materials to maintain oral health and treat dental ailments. Throughout history, humans have utilized natural resources, including animal-derived materials, for medicinal purposes. In dentistry, these materials have been employed for their antimicrobial, hemostatic, and regenerative properties, among others. This manuscript aims to explore the diverse range of animals and their derivatives used in dentistry as medicaments and dental materials, shedding light on their applications and potential benefits.

Animal-Derived Medicaments

Bee Products:

Honey, propolis, and royal jelly are examples of bee-derived products that have been used in traditional medicine for their antimicrobial and anti-inflammatory properties. In dentistry, these products have been investigated for their potential role in promoting oral health, particularly in wound healing and managing oral infections. (Poonam *et.al.*, 2023)

Marine Animals:

Marine animals such as sea sponges and corals have been utilized in dentistry for their ability to absorb and release fluids, making them suitable for applications such as hemostasis and wound management. Additionally, marine-derived compounds like chitosan from crustacean shells have been studied for their antimicrobial and tissue regenerative properties, with potential applications in dental materials.

Animal Tissues:

Various animal tissues, including collagen from bovine or porcine sources, have been extensively used in dentistry for their biocompatibility and regenerative properties. Collagen-based materials are commonly employed in periodontal therapy, guided tissue regeneration, and wound healing applications.

Animal-Derived Dental Materials

Bone Grafts:

Animal-derived bone graft materials, such as xenografts derived from bovine or porcine sources, have been widely used in oral and maxillofacial surgery for bone augmentation and regeneration. These materials provide a scaffold for new bone formation and are gradually replaced by the patient's own bone tissue.

Gelatin:

Gelatin, a protein derived from animal collagen, has been utilized in dentistry for various applications, including as a binder in dental impression materials and as a component of controlled-release drug delivery systems.

Shellac:

Shellac, a resin secreted by the lac bug, has been historically used in dentistry as a component of dental varnishes and adhesive materials. Its adhesive properties make it suitable for securing dental restorations and prostheses.

Ethical Considerations:

While animal-derived materials have played significant roles in dentistry, ethical considerations surrounding their use continue to be debated. Issues such as animal welfare, sustainability, and alternatives to animal-derived products are important factors to consider in the ethical evaluation of their utilization in dental practice.

Future Perspectives:

Advancements in biotechnology and biomaterials science offer promising avenues for the development of alternative materials that mimic the properties of animal-derived products without the ethical concerns associated with their use. Future research efforts should focus on exploring novel biomaterials with enhanced biocompatibility, functionality, and sustainability for applications in dentistry.

CONCLUSION

Animal-derived materials have been integral to the practice of dentistry for centuries, offering valuable properties and applications in medicaments and dental materials. While their use continues to be prevalent, ethical considerations and the pursuit of alternative materials drive ongoing research efforts in the field. By exploring innovative approaches and technologies, dentistry can continue to evolve towards more sustainable and ethically conscious practices.

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