LETTER TO THE EDITOR
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Advancements in Dental Restorative Materials: Implications for Patient Care

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Dear Editor,

I am writing to discuss the recent advancements in dental restorative materials and their impact on patient care. Dental amalgam has been a popular choice for restorations due to its durability. However, the evolving landscape of restorative dentistry calls for alternative materials with unique benefits. The Minamata Convention's restrictions on amalgam use have opened up discussions about its biocompatibility.[1]

Resin-based composites emerged as popular alternatives to amalgam due to their aesthetic appeal, offering tooth-colored restorations that blend seamlessly with natural dentition and provide excellent cosmetic outcomes; they also allow for conservative preparations and preserve healthy tooth structure.[2] With the phasing down of amalgam use in response to the Minamata Convention, resin-based composites are likely to become the material of choice for direct restoration.[1]

Glass ionomer cement (GICs) is another viable alternative, releasing fluoride for added protection against recurrent caries and exhibiting good biocompatibility. They exhibit good biocompatibility and have the potential to chemically bond to the tooth structure, minimizing microleakage. GICs are preferred for small restorations, cementing crowns and bridges, and treating root surface caries. A recent systematic review and meta-analysis showed that patients with GIC restorations had a lower incidence of caries compared to those with amalgam restorations.[3]

Ceramic materials, like porcelain, gained recognition for their exceptional aesthetics and biocompatibility and are commonly used for inlays, onlays, veneers, and crowns.[4] They closely resemble natural teeth and exhibit excellent resistance to staining and wear. However, it is important to note that ceramic materials have their limitations, such as potential brittleness and the need for careful handling during preparation and placement.

In response to these limitations, CADCAM ceramics and hybrid restorative materials have been developed. Nowadays, their use is becoming more widespread due to their excellent aesthetics and strength. These materials address some of the limitations of traditional ceramics by offering improved durability and fracture resistance. They are suitable for various restorative applications, including inlays, onlays, veneers, crowns, and even implant-supported restorations.

It is important to note that each restorative material has its advantages/limitations. Dental professionals should consider various factors, including the patient's oral health status, preferences, and clinical indications when selecting the most suitable material for a particular case. A recent umbrella review assessing the clinical effectiveness of different restorative materials for the treatment of carious primary teeth concluded that all materials studied performed similarly in terms of clinical effectiveness.[5] Therefore, the decision should be a collaborative one, made in consultation with the patient, to ensure their satisfaction and long-term oral health.

In conclusion, the recent advancements in restorative materials provide dental professionals with a diverse range of options to meet the evolving needs and preferences of patients. While amalgam remains a safe and reliable choice, it is essential to recognize the demand for alternative materials that offer aesthetic appeal and reduced metal content. By embracing these

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advancements and engaging in patient-centered discussions, dental professionals can deliver personalized care that meets highest standards of safety and patient satisfaction.

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