



BDA INFORMATION CENTRE MEDLINE SEARCH

AMALGAM IN DENTISTRY

Database: Ovid MEDLINE(R) <1950 to January Week 1 2010>

Search Strategy:

-
- 1 *Dental Amalgam/ (4973)
 - 2 limit 1 to (english language and local holdings) (2669)
 - 3 limit 2 to yr="2009" (26)
 - 4 from 3 keep 1-26 (26)

<1>

Unique Identifier

19793327

Status

MEDLINE

Authors

Felton DA.

Authors Full Name

Felton, David A.

Title

Thank you, FDA!.

Source

Journal of Prosthodontics. 18(7):549, 2009 Oct.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Publication Type

Editorial.

<2>

Unique Identifier

19830977

Status

MEDLINE

Authors

Roberts HW. Charlton DG.

Authors Full Name

Roberts, Howard W. Charlton, David G.

Institution

Biomaterials Evaluation, USAF Dental Evaluation and Consultation Service, Great Lakes, IL, USA.

Title

The release of mercury from amalgam restorations and its health effects: a review. [Review] [72 refs]

Source

Operative Dentistry. 34(5):605-14, 2009 Sep-Oct.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

Amalgam has successfully been used as a restorative material in dentistry for over a century. It has proven to be a cost-effective, wear-resistant material which, when properly placed, can provide many years of service. However, amalgam's popularity has decreased in recent years due, in part, to patient concerns about its potential for adversely affecting their health. Other reasons for its reduced use include the increased emphasis on more esthetic restorative materials and environmental concerns regarding the amount of mercury discharged into wastewater from dental offices. Controversy persists about amalgam's possible role in causing health problems due to its release of mercury. Although conclusive evidence is lacking that directly correlates amalgam with adverse health effects, clinicians should remain knowledgeable about mercury release from amalgam in order to intelligently address their patients' concerns. This article reviews the latest published scientific literature to provide this information. [References: 72]

Publication Type

Journal Article. Review.

<3>

Unique Identifier

19723944

Status

MEDLINE

Authors

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Title

Dental restoration dislodgment and fracture during scuba diving: a case of barotrauma.

Source

Journal of the American Dental Association. 140(9):1118-21, 2009 Sep.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

BACKGROUND: The term "barotrauma" is used to describe a physical injury caused by a rapid or extreme change in air pressure. Enclosed areas within the body are particularly affected by barotrauma. **CASE DESCRIPTION:** A 40-year-old man had complaints of restorations in three teeth fracturing and dislodging while he was scuba diving at a depth of 35 meters. The affected teeth contained carious dentin. The caries was removed, and the affected teeth underwent endodontic, restorative and prosthetic rehabilitation. **CLINICAL IMPLICATIONS:** Inadequate restorations and selection of dental materials in some cases predispose patients to barotrauma. To prevent barotrauma-related damages on the teeth, it is important to maintain good-quality restorations and avoid trapping air beneath them. Dentists and patients who are exposed to barometric stress as part

of their jobs or hobbies should know the causes of barotrauma and be aware of the importance of routine dental checkups to avoid barotrauma-related dental problems.

Publication Type

Case Reports. Journal Article.

<4>

Unique Identifier

19696819

Status

MEDLINE

Authors

Anonymous.

Title

US issues new amalgam regulation.

Source

British Dental Journal. 207(4):149, 2009 Aug 22.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Publication Type

News.

<5>

Unique Identifier

19585916

Status

MEDLINE

Authors

de Waal J. Dreyer WP.

Authors Full Name

de Waal, J. Dreyer, W P.

Institution

Division of Oral Medicine and Periodontics, University of the Western Cape.

Title

Oral medicine case book 16. Amalgam tattoos.

Source

SADJ. 64(3):128-9, 2009 Apr.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Publication Type

Case Reports. Journal Article.

<6>

Unique Identifier

19544821

Status

MEDLINE

Authors

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Title

Corrosion sealing of amalgam restorations in vitro.

Source

Operative Dentistry. 34(3):312-20, 2009 May-Jun.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

Amalgam restorations, when first placed, have been shown to exhibit a gap at the amalgam/tooth interface. With time in service, this gap fills with corrosion products that have the potential to "seal" the restoration. With the advent of high-copper, more corrosion-resistant amalgams, there has been concern that the time required to create this seal would be increased significantly when compared with low-copper traditional amalgams. The current study was designed to address this concern. Amalgam was condensed into a MACOR mold, simulating a Class I cavity form and then immersed into a 1.0% NaCl solution to simulate oral conditions. Using an air pressure test, the sealing was monitored over time. The results showed that the sealing was influenced by the size of the initial gap prior to immersion as well as corrosion resistance of the amalgam and that a corrosion-resistant amalgam with a small initial gap size can seal as quickly as a corrosion-prone amalgam. Therefore, it is not possible to predict sealing behavior based on corrosion resistance, alone. Furthermore, the presence of zinc in the amalgam alloy has been shown to result in the formation of zinc corrosion products in the amalgam/mold margin, which contributes to more rapid sealing. Analysis of a tooth extracted after 16 years of clinical service that had been restored with an amalgam-containing zinc was also shown to contain zinc corrosion products in the occlusal marginal area. This could explain the reported reduction in marginal fracture of clinically placed amalgam restorations made from zinc-containing alloys.

Publication Type

Comparative Study. Journal Article.

<7>

Unique Identifier

19250722

Status

MEDLINE

Authors

Burnham R. Bridle C.

Authors Full Name

Burnham, Richard. Bridle, Chris.

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Title

Aspergillosis of the maxillary sinus secondary to a foreign body (amalgam) in the maxillary antrum.

Source

British Journal of Oral & Maxillofacial Surgery. 47(4):313-5, 2009 Jun.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

We report a case of a Maxillary sinus aspergilloma, which presented after 2 years of symptoms of chronic sinusitis. There was an isolatable triggering event of extrusion of an amalgam filling material into the sinus. This was a complication of surgical extraction of the upper right second molar by his general dental practitioner.

Publication Type

Case Reports. Journal Article.

<8>

Unique Identifier

19480100

Status

MEDLINE

Authors

Burke FJ.

Authors Full Name

Burke, F J Trevor.

Title

The amalgam debate, reopened.

Source

Dental Update. 36(3):133, 2009 Apr.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Publication Type

Journal Article.

<9>

Unique Identifier

19455848

Status

MEDLINE

Authors

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Al-Omari, Qasem D. Al-Omari, Wael M. Omar, Ridwaan.

Institution

Department of Restorative Sciences, Faculty of Dentistry, Kuwait University, Kuwait.

Title

Factors associated with postoperative sensitivity of amalgam restorations.

Source

Journal of the Irish Dental Association. 55(2):87-91, 2009 Apr-May.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

Postoperative sensitivity is a common clinical problem with restorative treatments. **STUDY AIMS:** To identify factors that may be predictive of reported postoperative sensitivity to cold following placement of class I and II amalgam restorations in primary carious lesions. **MATERIALS AND METHODS:** One hundred and twenty patients were recruited. Patients were telephoned on days two and seven postoperatively and asked about sensitivity to cold and its intensity. If sensitivity remained up to day seven, patients were also contacted on days 30 and 90. **RESULTS:** Of the 51 teeth that had sensitivity at day two, 17 experienced mild pain, 26 were moderately painful and eight had severe pain. The percentage of females experiencing postoperative sensitivity was higher than that of males at days two, seven and 30 ($P=0.000$, 0.016 and 0.028 , respectively). Younger patients reported significantly more postoperative sensitivity than older ones at day two ($P=0.010$) but not at days seven and 30 ($P=0.157$ and 0.877). Postoperative sensitivity did not differ among the different tooth types at days two, seven and 30 ($P=0.219$, 0.236 and 0.338 , respectively), nor with respect to class I and class II cavities at days two, seven and 30 ($P=0.219$, 0.769 and 0.259 , respectively). Patients who had some pre-operative pain had significantly more postoperative sensitivity ($P=0.000$, 0.000 , and 0.004 at days two, seven and 30, respectively). **CONCLUSIONS:** Regression analysis suggested that younger patients, females, and pre-operative sensitivity to cold might be predictive of postoperative sensitivity following placement of amalgam restorations.

Publication Type

Journal Article.

<10>

Unique Identifier

19405840

Status

MEDLINE

Authors

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Title

Removal of an amalgam tattoo using a subepithelial connective tissue graft and laser deepithelialization.

Source

Journal of Periodontology. 80(5):860-4, 2009 May.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

BACKGROUND: A 56-year-old female presented for periodontal treatment with a large amalgam tattoo located in alveolar mucosa on the facial aspect of her maxillary central incisors. The lesion had been present for 42 years since having endodontic surgery at teeth #8 and #9 after a traumatic childhood incident. **METHODS:** A two-stage surgical approach was used to eliminate the lesion, beginning with a subepithelial connective tissue graft to increase tissue thickness subjacent to the amalgam tattoo. After 6 weeks of healing, the overlying pigmented tissue was removed using laser surgery to expose the underlying grafted connective tissue. **RESULTS:** After 2 months of healing following laser surgery, the amalgam pigmentation was completely removed, with good color match and an increased width of keratinized tissue at the surgical site. **CONCLUSION:** A relatively large amalgam tattoo in the esthetic zone can be adequately removed by a two-stage procedure using grafted palatal connective tissue and laser deepithelialization.

Publication Type

Case Reports. Journal Article.

<11>

Unique Identifier

19369921

Status

MEDLINE

Authors

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Institution

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Title

Effect of fluoride varnish or nail polish on the superficial roughness of amalgam restorations.

Source

Minerva Stomatologica. 58(4):151-6, 2009 Apr.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

AIM: The aim of this in vitro study was to evaluate the superficial roughness of amalgam specimens made with Velvalloy and Permite alloys, with superficial protection (Nail polish or Varnish-Fluorniz) and without protection, immersed in artificial saliva or Coke. **METHODS:** All the 84 specimens (N = 7) were performed according to the manufacturer's recommendations for each alloy, condensed in acrylic moulds and immediately polished. The superficial protections were made before the immersion in the proposed solutions. After superficial treatment, the specimens were maintained at 37 degrees C during 21 days. All specimens were brushed with a tooth paste twice a day. The roughness analysis was carried out using a Prazis equipment (Ra) in four moments (T): after 48 hours (T1), 7 days (T2), 14 days (T3) and 21 days (T4). The data of each alloy were individually submitted to statistical analysis (ANOVA) and Tukey test (P < 0.01). **RESULTS:** Statistical analysis has demonstrated the existence of a significance difference for the studying factors, except for immersion. The mean values

of superficial roughness, for evaluated groups, in relation to protection and time factor were, respectively: Po (1.16) = P1 (1.13) < P2 (2.96) and T1 (1.56) = T2 (1.66) = T3 (1.77) < T4 (2.01) for Velvalloy; and Po (1.14) = P1 (0.85) < P2 (2.61) and T1 (1.18) < T2 (1.48) = T3 (1.67) = T4 (1.79) for Permite. CONCLUSION: It was concluded that the use of nail polish as superficial protection presented less roughness than varnish for the studied alloys; and Velvalloy roughness increased at 21 days while Permite increased at seven days and presented a tendency to stability.

Publication Type

Journal Article.

<12>

Unique Identifier

19368595

Status

MEDLINE

Authors

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Title

Ceramic inlays: a case presentation and lessons learned from the literature.

Comments

Comment in: J Esthet Restor Dent. 2009;21(2):88; PMID: 19368596]

Source

Journal of Esthetic & Restorative Dentistry: Official Publication of the American Academy of Esthetic Dentistry. 21(2):77-87, 2009.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

Ceramic dental restorative materials offer an esthetic alternative to dental amalgam or gold. There is uncertainty relative to the longevity of ceramic inlay restorations. Recently published long-term research studies reveal general clinical performance trends. These trends are discussed while presenting a ceramic inlay case. Successful clinical use of ceramic inlay materials is absolutely dependent on the creation of an uncompromised adhesive tooth/ceramic interface. Ceramic inlay restorations perform well in terms of long-term retention, color match, and anatomic contour stability. These restorations all experience limited margin deterioration that does not predispose to marginal discoloration or secondary caries. Patients rarely suffer from postoperative sensitivity secondary to ceramic inlay placement. Ceramic inlays fail predominantly as a result of crack propagation from material flaws leading to bulk fracture. Some superficial ceramic defects may be repaired with composite resin. Internal material flaws are minimized by industrial production of indirect pressable glass-ceramic materials or ceramic blocks designed for computer-aided design/computer-assisted manufacturing (CAD/CAM). External surface flaws are limited by careful polishing techniques. Strategic placement of ceramic inlays in teeth that are not subject to heavy occlusal loading will result in more predictable long-term performance. Preparation design to prevent flexure of ceramic inlay

materials is essential. **CLINICAL SIGNIFICANCE:** Use of ceramic inlays to restore defects in posterior teeth requires careful attention to detail. Placement of ceramic inlay materials in high-stress areas may result in less predictable long-term performance. Ceramic inlays are advantageous for restoring moderately sized defects when optimal control of restoration contours and esthetics is desired.

Publication Type

Case Reports. Journal Article.

<13>

Unique Identifier

19364244

Status

MEDLINE

Authors

Mickenautsch S. Yengopal V. Leal SC. Oliveira LB. Bezerra AC. Bonecker M.

Authors Full Name

Mickenautsch, S. Yengopal, V. Leal, S C. Oliveira, L B. Bezerra, A C. Bonecker, M.

Institution

Division of Public Oral Health, University of the Witwatersrand Johannesburg, South Africa.

Title

Absence of carious lesions at margins of glass-ionomer and amalgam restorations: a meta- analysis.

Source

European Journal of Paediatric Dentistry. 10(1):41-6, 2009 Mar.

Local Messages

ISSUES HELD AT THE BDA INFORMATION CENTRE FROM 2002 ONWARDS

Abstract

AIM: To report on the absence of carious lesions at margins of glass ionomer cement (GIC) and amalgam restorations. **METHODS:** Six Anglophone and 1 Lusophone databases were searched for articles up to 5 January 2008. Inclusion criteria for articles were: (i) titles/abstracts relevant to topic; (ii) published in English, Portuguese or Spanish language; (iii) reporting on a randomised control trial. Exclusion criteria were: (i) insufficient random allocation of study subjects (ii) operator and subject not blinded, where appropriate; (iii) not all entered subjects accounted for at trial conclusion; (iv) subjects of both groups not followed up the same way. Articles were accepted only if they complied with all the criteria. Ten articles complied with the inclusion criteria and were selected for review. From these 4 were rejected and 6 articles reporting on 8 separate studies accepted. Due to aspects of heterogeneity, studies were sub-grouped before meta- analysis. **RESULTS:** Significantly less carious lesions were observed on single-surface GIC restorations in permanent teeth after 6 years as compared to restorations with amalgam (OR 2.64 - CI 95% 1.39 - 5.03, p= 0.003). No studies investigating multiple-surface restorations on permanent teeth were identified. Studies investigating carious lesions at margins of restorations in primary teeth showed no difference between both materials after 3 and 8 years. **CONCLUSIONS:** Carious lesions at margins of single-surface GIC restorations are less common than with amalgam fillings after 6 years in permanent teeth. No difference was observed in primary teeth. More trials are needed in order to confirm these results.

Publication Type

Comparative Study. Journal Article. Meta-Analysis.

<14>

Unique Identifier

19356175

Status

MEDLINE

Authors

Anonymous.

Title

Commentary by Mahmoud Torabinejad Torabinejad M, Pitt Ford TR, McKendry DJ, Abedi HR, Miller DA, Kariyawasam SP (1997) Histologic assessment of Mineral Trioxide Aggregate as a root-end filling in monkeys. *Journal of Endodontics* 23, 225-8.

Comments

Comment on: *Int Endod J.* 2009 May;42(5):408-11; PMID: 19356176]

Source

International Endodontic Journal. 42(5):406-7, 2009 May.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Publication Type

Comment. Journal Article.

<15>

Unique Identifier

19329457

Status

MEDLINE

Authors

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Title

Effects of bleaching on mercury ion release from dental amalgam.

Source

Journal of Dental Research. 88(3):239-43, 2009 Mar.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

The chemical reactions that take place at the amalgam surface when exposed to bleaching agents are not well-understood. It is known, however, that mercury ions are released from dental amalgam when bleached. We hypothesized that increasing concentrations of hydrogen peroxide are more effective than water at increasing mercury ion release from dental amalgam. We prepared dental amalgam discs (n = 65) by packing amalgam into cylindrical plastic molds and divided them into 13 equal groups of 5 discs each. The discs in each group were individually immersed in either 0%, 3.6%, 6%, or 30% (w/v) hydrogen peroxide at exposure periods of 1, 8, 48, and 168 hrs. Samples were

taken for mercury ion release determination by inductively coupled plasma mass spectrometry. There were significant increases in mercury release between control and all other hydrogen peroxide concentrations at all exposure times ($p < 0.05$).

Publication Type

Comparative Study. Journal Article. Randomized Controlled Trial.

<16>

Unique Identifier

19231059

Status

MEDLINE

Authors

Scholtanus JD. Ozcan M. Huysmans MC.

Authors Full Name

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Title

Penetration of amalgam constituents into dentine. [Review] [65 refs]

Source

Journal of Dentistry. 37(5):366-73, 2009 May.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

OBJECTIVES: Amalgam restorations are replaced by adhesively placed composite resin restorations at an increasing rate. After the removal of amalgam dentine often shows marked dark discoloration that is attributed to the penetration of corrosion products from overlying amalgams. It is questioned whether penetration of metals into dentine affects the dentine as a substrate for adhesive procedures. This study has been performed to clarify the origin of dark discoloration of dentine by metals from amalgam with special regards to corrosion products. **METHODS:** A review of the literature has been performed using Medline database. As keywords dentine and amalgam, subsequently combined with penetration, interface, crevice, interaction, corrosion, were used. This was followed up by extensive hand search using reference lists of relevant articles. **RESULTS:** Data in the literature have been gathered from extracted amalgam filled teeth and from artificially aged amalgam filled teeth. Corrosion studies have been performed in vivo aged teeth as well as in vitro. Sn is the main element, followed by Zn and Cu, that is consistently found in dentine underneath amalgam, as well as in amalgam corrosion products and in marginal seal deposits. Penetration of elements from amalgam has only been observed in discolored and in demineralised dentine. **CONCLUSIONS:** Darkly discolored dentine as found underneath amalgam restorations contains amalgam corrosion products and is demineralised. Therefore it must be considered a different substrate for clinical procedures than sound dentine. [References: 65]

Publication Type

Journal Article. Review.

<17>

Unique Identifier

19329948

Status

MEDLINE

Authors

Hutchinson E.

Authors Full Name

Hutchinson, E.

Title

Dot, dot, dash, dash.

Source

British Dental Journal. 206(6):299, 2009 Mar 28.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Publication Type

Case Reports. Letter.

<18>

Unique Identifier

19073953

Status

MEDLINE

Authors

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Title

Shear bond strength of brackets bonded to amalgam with different intermediate resins and adhesives.

Source

European Journal of Orthodontics. 31(2):207-12, 2009 Apr.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

The aims of this study were to compare, in vitro, the shear bond strength (SBS) of stainless steel orthodontic brackets bonded to silver amalgam with the use of three different intermediate resins and two different adhesives, and to evaluate bond failure mode. Forty-five amalgam specimens were divided into three equal groups. In groups 1 and 2, the brackets were bonded with Unite (3M Unitek) using Reliance Metal Primer (RMP; Reliance Orthodontic Products) and Power Bond OLC (PB OLC; Ortho Organizers Inc.) as intermediate resins, respectively. In group 3, Resinomer and One-Step Plus (OS+; Bisco Inc.) were used. Thirty bovine teeth served as the controls to test bracket bonding to acid-etched enamel with Unite and Resinomer-OS+. After thermocycling from 10 to 50 degrees C 1000 times, all samples were tested for SBS. Bond failure sites were classified using a modified

adhesive remnant index (ARI) system. Data were analyzed with one-way analysis of variance, post hoc Tukey multiple comparison and chi-square tests. The results showed that the mean SBS to amalgam surfaces were significantly lower than those to etched bovine enamel ($P < 0.001$). There were no statistically significant differences in mean SBS between the amalgam bonding groups ($P > 0.05$). For the ARI, significant differences were found between the amalgam- and enamel-bonding groups ($P < 0.001$). The mean SBS of stainless steel orthodontic brackets bonded to amalgam surfaces with RMP, PB OLC, OS+ intermediate resins and Unite and Resinomer adhesives was significantly lower than to etched bovine enamel. Bond failure occurred at the amalgam-adhesive interface regardless of the adhesive system and without damage to the amalgam restoration.

Publication Type

Comparative Study. Journal Article.

<19>

Unique Identifier

19260208

Status

MEDLINE

Authors

Lamacki W.

Authors Full Name

Lamacki, Walter.

Title

Sesquicentennial.

Source

CDS Review. 102(1):32, 2009 Jan-Feb.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Publication Type

Historical Article. Journal Article.

<20>

Unique Identifier

19085213

Status

MEDLINE

Authors

Vidnes-Kopperud S. Tveit AB. Gaarden T. Sandvik L. Espelid I.

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Vidnes-Kopperud, Simen. Tveit, Anne Bjorg. Gaarden, Torunn. Sandvik, Leiv. Espelid, Ivar.

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Title

Factors influencing dentists' choice of amalgam and tooth-colored restorative materials for Class II preparations in younger patients.

Source

Acta Odontologica Scandinavica. 67(2):74-9, 2009.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

OBJECTIVE: To identify factors associated with dentists' decisions on choice of restorative material in children and adolescents. **MATERIAL AND METHODS:** In the period 2001-2004, 27 dentists in the Public Dental Health Service in Norway placed 4030 Class II restorations in 1912 patients. The reason for placement, previous caries experience (DMFT), oral hygiene, and characteristics of the cavity were recorded. **RESULTS:** The most frequently used material was resin composite (81.5%), followed by compomer (12.7%), amalgam (4.6%), and glass ionomer cement (1.2%). Tooth-colored restorations were more frequently placed than amalgam in younger patients ($p=0.017$). Female patients received fewer amalgam restorations than male patients ($p=0.006$). Amalgam was more often used in patients with high DMFT ($p<0.001$) and more commonly in treatment of deeper dentine caries than caries near the dentino-enamel border ($p=0.021$). Amalgam was more frequently placed in molars than in premolars ($p<0.001$). In a logistic regression model, gender, DMFT, caries severity, and tooth type were significantly related to choice of material. **CONCLUSION:** Dentists' choices of restorative material indicate that the majority prefer amalgam in more challenging restorations with respect to caries activity, lesion depth, and tooth type. The findings indicate that in a period when the use of amalgam was phasing out, resin composite was the predominant material of choice for Class II restorations in children and adolescents.

Publication Type

Journal Article. Research Support, Non-U.S. Gov't.

<21>

Unique Identifier

19215745

Status

MEDLINE

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Title

Restoration of posterior teeth in clinical practice: evidence base for choosing amalgam versus composite. [Review] [34 refs]

Source

Dental Clinics of North America. 53(1):71-6, ix, 2009 Jan.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

This article reviews the current use of amalgam versus resin composite in posterior restorations and the evidence-base for choosing between these two treatment options. While much research has been

published on the issue of the clinical use of amalgam versus resin composite, there are several issues that limit the true evidence-base on the subject. Furthermore, while the majority of published studies on posterior composites would seem to indicate equivalent clinical performance of resin composite to amalgam restorations, the studies that should be weighted much more heavily (randomized controlled trials) do not support the slant of the rest of the literature. As part of an evidence-based approach to private practice, clinicians need to be aware of the levels of evidence in the literature and need to properly inform patients of the true clinical outcomes that are associated with the use of amalgam versus resin composite for posterior restorations, so that patients are themselves making informed decisions about their dental care. [References: 34]

Publication Type

Journal Article. Review.

<22>

Unique Identifier

18782333

Status

MEDLINE

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Title

Prospective study of 5-year caries increment among children receiving comprehensive dental care in the New England children's amalgam trial.

Source

Community Dentistry & Oral Epidemiology. 37(1):9-18, 2009 Feb.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

OBJECTIVE: To measure the 5-year caries increment among high-risk children during their participation in the New England Children's Amalgam Trial (NECAT), and to evaluate sociodemographic factors that may account for any observed disparities. **METHODS:** NECAT recruited 534 children aged 6-10 with at least two decayed posterior occlusal surfaces from urban Boston and rural Maine. After restoration of baseline caries and application of sealants to sound surfaces, NECAT continued to provide free comprehensive semiannual dental care to participants. The net caries increment of children who completed the 5-year follow-up (n = 429) was calculated and predictors of caries increment were investigated using multivariate negative binomial models. **RESULTS:** The majority of children (89%) experienced new caries by the end of the 5-year follow-up. Almost half (45%) had at least one newly decayed surface by the first annual visit. At year 5, the mean number of new decayed teeth was 4.5 +/- 3.6 (range 0-25) and surfaces was 6.9 +/- 6.5 (range 0-48). Time trends showed a noticeably higher increment rate among older children and young teenagers. Multivariate models showed that age (P < 0.001), number of baseline carious surfaces (P < 0.001), and toothbrushing frequency (<1/day versus >or=2/day, P = 0.04) were associated with

caries increment. Only 48 children (11%) did not develop new caries. CONCLUSIONS: Despite the receipt of comprehensive semiannual dental care, the vast majority of these high-risk children continued to develop new caries within 5 years. While disparities were observed by age, extent of prior decay, and toothbrushing frequency, no other sociodemographic factors were associated with caries increment, suggesting that the dental care provided during the trial reduced sociodemographic disparities in prior caries experience that were observed at baseline.

Publication Type

Comparative Study. Journal Article. Randomized Controlled Trial. Research Support, N.I.H., Extramural.

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Title

An evaluation of replacement rates for posterior resin-based composite and amalgam restorations in U.S. Navy and marine corps recruits.

Source

Journal of the American Dental Association. 140(2):200-9; quiz 249, 2009 Feb.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

BACKGROUND: Restoration replacement is a clinical concern that has not been studied among military personnel. The authors determined the prevalence of placement of posterior amalgam and resin-based composite restorations and the incidence of replacement among U.S. Navy and Marine Corps personnel. **METHODS:** The authors analyzed dental records from 2,780 personnel to determine the relative risk of replacement for initially sound restorations during subjects' first years of military service. **RESULTS:** At the initial examination, 964 (15.2 percent) of amalgam restorations and 199 (17.4 percent) of resin-based composite restorations required re-treatment. Of those judged clinically acceptable, 14.2 percent of amalgam and 16.7 percent of resin-based composite restorations required replacement during the observation period. The authors found significant increases in replacement rates for resin-based composite restorations compared with amalgam restorations for replacement due to all causes (adjusted hazard ratio, 1.28; $P < .05$), as well as for replacement due to restoration failure (adjusted hazard ratio, 1.64; $P < .01$). **CONCLUSIONS:** About 30 percent of posterior restorations required replacement, either at the initial examination or during the subjects' first years of military service. In a young military population, significantly more resin-based composite restorations in place at the initial examination will require replacement than will amalgam restorations. Multi-surface restorations had higher rates of replacement than did one-

surface restorations, and subjects at high caries risk experienced significantly higher replacement rates than did those at low caries risk. **CLINICAL IMPLICATIONS:** The number of surfaces restored and subjects' caries risk status may influence the longevity of resin-based composite and amalgam restorations.

Publication Type

Comparative Study. Journal Article.

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Title

Longevity of conventional and bonded (sealed) amalgam restorations in a private general dental practice.

Source

British Dental Journal. 206(2):E3; discussion 88-9, 2009 Jan 24.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

OBJECTIVE: To compare and contrast the longevity of conventionally placed dental amalgam restorations with those placed using bonding techniques. **DESIGN:** Retrospective survival analysis (Kaplan Meier) of dental amalgam restorations placed by a single operator in a private general dental practice. **SUBJECTS AND METHODS:** The records relating to dental amalgam restorations placed between 1 August 1996 and 31 July 2006 were sourced. The details of these were placed into a database that permitted flexible interrogation. Survival data on conventionally placed amalgams (C) and those bonded with either Panavia Ex (PE) or Rely X ARC (RX) were exported into a statistical package to permit survival analysis by the method of Kaplan and Meier. **Results** The number of restorations available for analysis were C = 3,854, PE = 51 and RX = 1,797. Percentage survival at one year was C = 96.29, PE = 95.65, and RX = 97.58. Percentage survival at five years was C = 86.21, PE = 76.35 and RX = 82.59. A Log Rank test demonstrated no statistically significant difference ($p > 0.05$) in survival between the restoration types. Amalgam restorations bonded with PE or RX exhibited an acceleration of failure rate around 1,000 days post-placement. Further survival analyses of the method of restoration versus type of restored teeth (molar/premolar) and cavity preparation (Class I/II) showed no significant difference in the survival curves in respect of type of restored tooth. In the comparison of Class I and II cavities, the survival curves for the restorations differed significantly ($p < 0.0001$), however when the curves for the Class I restorations alone were compared, no significant difference was found ($p = 0.2634$). This was also the case for the Class II restorations ($p = 0.2260$). **CONCLUSIONS:** Within the limitations of the study, bonding amalgams,

compared to placing them conventionally, afforded no significant benefit upon restoration longevity. This, coupled with the emerging trend of an accelerating decline in longevity of bonded amalgams from 1,000 days onwards and with the greater cost, challenges the justification for routine bonding of amalgams.

Publication Type

Comparative Study. Journal Article.

<25>

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Title

Finnish dentists' perceptions of the longevity of direct dental restorations.

Source

Acta Odontologica Scandinavica. 67(1):44-9, 2009 Feb.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

OBJECTIVES: To evaluate Finnish dentists' perceptions of the longevity of direct dental restorations; to assess the possible impacts of dentists' characteristics on these perceptions; and to compare the present longevity estimates with those of recent European reports. **METHODS:** A questionnaire to 592 general practitioners, systematically sampled from the Finnish Dental Association's membership list, was posted in April 2004 and data collection was finished by the end of June. The question "In general, what is your estimate for the mean age of restoration in permanent teeth?" pointed restorations: Class II and MOD composites and amalgam in a posterior tooth and Class III composites in an incisor. Dentists' gender, main work, and year of graduation served as background information. Of the 339 (57%) respondents, only public and private dentists were included; 11 were excluded. Three studies fulfilled the inclusion criteria for recent reports on restoration longevity. Statistical evaluation was by one-way ANOVA, with $p=0.05$ as the level of significance. **RESULTS:** The mean of the estimates for all types of composite was 9.0 years (SD 3.6; 95% CI 8.6-9.3) and 18.7 years for amalgam (SD 7.3; 95% CI 18.0-19.5). Male dentists gave longer estimates than female dentists for posterior composites, but shorter estimates for amalgam. Compared to public dentists, private dentists gave longer estimates for posterior composites. All estimates were longer than those reported in the recent literature. **CONCLUSION:** Dentists' perceptions of posterior composite longevity are significantly longer among males than among females and among private than public sector dentists, and exceed the median longevity reported in recent studies.

Publication Type

Journal Article. Research Support, Non-U.S. Gov't.

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Title

Removal of an amalgam tattoo using a subepithelial connective tissue graft and laser deepithelialization.

Comments

Comment in: J Periodontol. 2009 Dec;80(12):1909-10; author reply 1910; PMID: 19961372]

Source

Journal of Periodontology. 80(5):860-4, 2009 May.

Local Messages

THIS JOURNAL IS AVAILABLE IN THE BDA INFORMATION CENTRE

Abstract

BACKGROUND: A 56-year-old female presented for periodontal treatment with a large amalgam tattoo located in alveolar mucosa on the facial aspect of her maxillary central incisors. The lesion had been present for 42 years since having endodontic surgery at teeth #8 and #9 after a traumatic childhood incident. **METHODS:** A two-stage surgical approach was used to eliminate the lesion, beginning with a subepithelial connective tissue graft to increase tissue thickness subjacent to the amalgam tattoo. After 6 weeks of healing, the overlying pigmented tissue was removed using laser surgery to expose the underlying grafted connective tissue. **RESULTS:** After 2 months of healing following laser surgery, the amalgam pigmentation was completely removed, with good color match and an increased width of keratinized tissue at the surgical site. **CONCLUSION:** A relatively large amalgam tattoo in the esthetic zone can be adequately removed by a two-stage procedure using grafted palatal connective tissue and laser deepithelialization.

Publication Type

Case Reports. Journal Article.