a model that included age, weight, race, sex, and the physical subscore (R^2 = .4186, p = < .0001). According to the model, the difference in calcaneal BMD between subjects with the lowest and highest physical subscores was 0.102 g/cm^2, corresponding to 1.275 BMD T-score units, and a doubling of the fracture risk. **Conclusions:** Frail elderly subjects have lower calcaneal BMD than expected for their age, sex, race, and weight. Assessment of frailty with an easily obtained, self-reported measure such as the VES-13 can identify community-dwelling elderly subjects who have higher fracture risk and greater potential benefit from an aggressive approach to the diagnosis and treatment of osteoporosis.

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A MITOCHONDRIA-TARGETED DNA REPAIR ENZYME, HOGG-1, PREVENTS OXIDANT-INDUCED A549 CELL APOPTOSIS BY PRESERVING MITOCHONDRIAL ACONITASE. V. Panduri, S. Surapureddi, S. Soberanes, S.A. Weitzman, S. Budinger, P. Schumacker, D.W. Kamp, Northwestern University, Chicago, IL.

Oxidant-induced alveolar epithelial cell (AEC) apoptosis is implicated in mediating lung injury, fibrosis, and malignant transformation by mechanisms that are not fully established. We previously reported that oxidative stress (eg, amosite asbestos or H_2O_2) induces mitochondria-regulated AEC apoptosis and that overexpression of a mitochondria-targeted DNA repair enzyme, human 8-oxoguanine-DNA glycosylase 1 (mt-hOgg-1), is protective. In this study, we explore the mechanism underlying the protective effects of mt-hOgg-1 (kind gift of Dr. M. Gillespie). We find that the protective effects are not due to redox activity of mt-hOgg-1 since, compared with empty vector controls, mt-hOgg-1 overexpressing A549 cells did not alter asbestos-induced ROS production as assessed by either DCF fluorescence or an adenovirally expressed redox sensor (ro-GFP) targeted to the mitochondria. As expected, mt-hOgg-1 enhanced DNA repair assessed by an 8-oxoG incision assay (1.7 ± 0.2-fold vs control; p < .05). Both asbestos and H_2O_2 reduced mitochondria (mt)-aconitase activity and protein expression, but, notably, these effects were completely blocked in mt-hOgg-1 over-expressing A549 cells. Immunoprecipitation studies show that hOgg-1, similar to frataxin, coprecipitates with mt-aconitase. We also found that hOgg-1 mutants that completely lack 8-oxoguanine DNA repair activity (V317, Long AB; kind gift of Dr. V. Bohr) blocked oxidant-induced caspase 9 activation and DNA fragmentation comparable to wild-type hOgg-1. We conclude that mt-hOgg-1 has a dual function as a DNA repair protein as well as a mt-aconitase chaperone. These data suggest a novel role of Mt-hOgg-1 preservation of AEC mitochondria aconitase in the pathogenesis of oxidant-induced lung toxicity.

Funding: VA Merit Award (DK), NIH-HL67835-01 (GRSB).

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ULTRASOUND IMAGING OF THE SALIVARY GLANDS IN SUBJECTS WITH PRIMARY SJÖGREN'S SYNDROME AND IN VOLUNTEERS WITHOUT SICCA SYMPTOMS. S.G. Rao, D. Walia, H.B. Lindsley, University of Kansas School of Medicine, Kansas City, KS.

Introduction: Sjögren's syndrome (SS) is an autoimmune disorder involving the salivary and lacrimal glands. The most common clinical presentation of SS is dry eyes and dry mouth. Relevant serum autoantibodies such as anti-SS-A (Ro) or anti-SS-B (La) are often detectable. Currently, minor salivary gland biopsy is recommended to confirm a diagnosis of SS. However, biopsy is invasive and causes discomfort to the patient. Salivary gland abnormalities may be detected by imaging studies such as ultrasonography, which is noninvasive. Published studies disagree on the overall utility of ultrasonography in SS. The purpose of this study was to evaluate the utility of high-frequency ultrasonography in identifying salivary gland abnormalities in SS. **Methods:** In the subjects of this study, a clinical diagnosis of SS was previously established by the presence of sicca symptoms and autoantibodies such as anti-SS-A (Ro) and anti-SS-B (La). Subjects with other connective tissue diseases, such as rheumatoid arthritis or lupus, were excluded from this study. Ultrasound images of the parotid glands were obtained using an 8 to 16 MHz transducer (Diasus model UME71-8, Scotland, UK). Two rheumatologists, blinded to the subjects' identity and clinical history, interpreted the images for heterogeneity. These readers used an atlas of standardized images for comparison. The images were graded on a 4-point scale: 1 = definitely normal, 2 = probably normal, 3 = probably abnormal, or 4 = definitely abnormal. Subjects also were clinically examined by the sonographer by palpation with two fingers over the area of the parotid gland. **Results:** We imaged parotid glands of 20 subjects. Ten had SS (9 female and 1 male) and 10 were control subjects (10 female). The mean ages for the control group (55.6 ± 14.5 years) and subjects with SS (53.9 ± 17.5 years) were similar. The readers observed two patterns of hypoechoic areas on ultrasonography in subjects with SS: diffuse and focal. We defined focal as two or more overlapping areas in a 0.25 cm^2 area of the gland. In diffuse disease, the hypoechoic areas were spread throughout the gland. The readers observed 2 diffuse and 7 focal ultrasound studies of 10 in the subjects with SS. One ultrasound study of a subject with SS had no ultrasound abnormalities. Four of 10 subjects with SS had palpable bogginess and nodularity of the parotid gland. All of these subjects were rated abnormal on ultrasonography. Also, 5 of 10 subjects with SS had a benign clinical examination but were rated abnormal on ultrasonography. On ultrasonography, 9 of 10 control subjects were rated normal by reader 1 (mean ultrasound score of 1.6), 5 of 10 control subjects were rated normal by reader 2 (mean ultrasound score of 2.5), and 9 of 10 subjects with SS were rated abnormal by both readers (mean ultrasound scores of 3.5 and 3.6). The higher mean scores for reader 2 reflect a higher threshold for calling images normal. The specificity for reader 2 was 50%, and the specificity for reader 1 was 90%. Both readers achieved a sensitivity of 90%. **Conclusion:** Our findings suggest that abnormalities in subjects with SS can be detected on ultrasonography, even in those with a normal physical examination. We conclude that ultrasound imaging of the salivary gland can be useful in confirming a noninvasive diagnosis of SS.

Sensitivity and Specificity

	Reader 1	*Reader 2*
Sensitivity	90%	90%
Specificity	90%	50%

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TRICHOBEZOAR AND ACUTE ABDOMEN. R.P. Sapkota, Coney Island Hospital, Brooklyn, NY.

Background: Trichobezoar is defined as a foreign body composed of hair found in the stomach and rarely in the intestine.The first description of human trichobezoar was in 1779. More than 90% of human trichobezoar occurs in young females, often with a history of some mental illness. The bezoar may cause a mechanical obstruction of the gut. This is especially true in the stomach, where the pyloric could be blocked; clinical manifestations include abdominal pain, epigastric distress, nausea, vomiting, and fullness. **Case Report:** A 21-year-old female with a history of mental illness was brought to the emergency department of Coney Island Hospital on November 5, 2006. The patient presented with abdominal pain, which started 1 day prior to admission but worsened in the last 2 to 3 hours prior to admission, nausea, and multiple episodes of vomiting. The patient denied diarrhea, fever, urinary problems, and any abdominal pain or discomfort previously. She was not taking any medication; she wears an IUD contraceptive and had also had 2 to 3 days of vaginal bleeding. On physical examination, she was acutely ill looking, blood pressure was 130/90 mm Hg, pulse was 90/min, temperature was 97.8°F, and respiration was 22/min; she appeared to be dehydrated. There were no signs of trauma. The chest and cardiovascular system were normal, and an abdominal examination was remarkable for BS present, very tender, gardening, and a palpable hard mass in the the epigastric area and left upper quadrant and umbilical area. Stool guaic was negative. Gastric lavage was unrevealing. A transvaginal US by GYN was normal. Laboratory tests were β-HCG negative, WBC 24.0, Hgb 9.6, MCV 67.1, Plt 503, SEG 95, Na 135, K 4.0, CL 101, CO_2 20, BUN 9, Creat 0.7, Ca 10.1, total P 7.5, Alb 4.7, Alk phos 44, AST 25, ALT 18, PT 13.8, INR 1.4, and aPTT 21.9. Plain abdominal radiography showed gastric dilatation. Abdominal CT showed gastric dilatation with bezoars versus food material with large intramural air collection at the greater curvature with adjacent intraperitonum air collection and possible perforation at the antrum of the stomach and large intraperitoneal fluid collection. The patient was scheduled for emergent surgical exploration, which found trichobezoars. Biopsy showed polypoid edematous gastric mucosa with trichobezoar. A liquid diet was started on the fourth day, and she was discharged after 25 days. Postoperative upper gastrointestinal endoscopic studies did not reveal any inflammation in the stomach. She was referred for psychiatric consultation and 6 months of follow-up. **Conclusion and Discussion:** Bezoars are masses of solidified organic and inorganic biologic material commonly formed in the stomach and small bowel. The major types are phytobezoars, trichobezoars, pharmacobezoars, lactobezoars, and miscellaneous. Trichobezoars, composed of hair, usually occur in young women with psychiatric disorders. Trichotillomania (hair pulling) and trichophagia (hair eating) usually precede trichobezoar formation. The ingested hairs in the stomach form a hairball, the interstices of which get entangled by vegetable fibers, and the stomach is unable to push this mass forward. Sometimes the gastric trichobezoar fragments into pieces, which then pass into the intestine and at times may cross the ileocecal junction. Affected patients remain asymptomatic for many years and develop symptoms insidiously, usually present with nausea, vomiting, vague abdominal pain, mass, weight loss, anemia, jaundice, pancreatitis, and bowel obstruction.

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RISK FACTORS ASSOCIATED WITH POSTRADIATION DENTAL LESIONS. M.P. Walker, B. Wichman, K.B. Williams, M. Rondeau, P. Spencer, University of Missouri at Kansas City School of Dentistry, Kansas City, MO.

Objectives: Teeth exposed to therapeutic radiation have an increased susceptibility to a highly destructive form of dental disease. As part of a 5-year investigation, the overall goal is to analyze predictors of the severity of postradiation dental lesions and potentially determine if there is a link between postradiation dental lesions and radiation dose. **Methods:** During year 1 of the investigation, 21 subjects who had received head and neck radiotherapy were evaluated concerning individual tooth-level radiation dose, elapsed time after radiation, frequency of topical fluoride, xerostomia, and oral hygiene status. Subjects' teeth were also evaluated using an index developed to assess postradiation tooth destruction and associated restorations. Tooth destruction was operationalized as a mean tooth surface score (MSS). Tooth restoration was operationalized in a similar manner as a mean restoration score (MRS). Descriptive statistics were used to characterize the subject population. To account for the nesting of teeth within individuals and account for radiation dose varying for different teeth within individuals, multivariate analysis was conducted using generalized estimating equations, with exchangeable working matrices and robust standard errors. A significance level of $p \leq .05$ was used. **Results:** Subjects (6 females, 15 males), most of whom reported xerostomia, ranged in age from 18 to 82 years. Four hundred seventeen teeth were evaluated. Elapsed time since radiation varied from 1 to 133 months; individual tooth-level radiation doses ranged from 0 to 69 Gy. Results showed that there were significant interaction effects of elapsed time*radiation dose, elapsed time*oral hygiene, elapsed time*fluoride, fluoride*oral hygiene, and oral hygiene*radiation dose, as well as main effects of radiation dose, xerostomia, oral hygiene, and fluoride frequency on tooth destruction (MSS). In contrast, only elapsed time and time*oral hygiene had a significant effect on the restoration score (MRS). **Conclusions:** The preliminary evidence suggests that radiation dose and dose*elapsed time following radiotherapy might be linked to the severity of postradiation lesions. Furthermore, factors such as xerostomia, oral hygiene, and the use of topical fluoride might also play a role in lesion severity.

Supported in part by NIH/NIDCR K23 DE01623.

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VASCULAR CELL ADHESION MOLECULE 1 ACTIVATION OF ENDOTHELIAL PROTEIN KINASE C α. H. Abdala-Valencia, J.M. Cook-Mills, Northwestern University, Feinberg School of Medicine, Chicago, IL.

Lymphocyte binding to vascular cell adhesion molecule 1 (VCAM-1) activates endothelial cell NADPH oxidase, resulting in the generation of 1 μM of hydrogen peroxide. This is required for VCAM-1-dependent lymphocyte migration. In this report, we identified a role for protein kinase Cα (PKCα) in VCAM-1 signal transduction in human and mouse endothelial cells. VCAM-1-dependent lymphocyte migration under 2 dynes/cm^2 laminar flow was blocked by pretreatment of endothelial cells with dominant negative PKCα or the PKCα-selective inhibitors, Rö-32-0432 or Gö-6976. Phosphorylation of PKCαThr638, an autophosphorylation site indicating enzyme activity, was increased by antibody crosslinking of VCAM-1 on endothelial cells or by the exogenous addition of 1 μM of hydrogen peroxide. The anti-VCAM-1-stimulated phosphorylation of PKCαThr638 was blocked by scavenging of hydrogen peroxide and by inhibition of NADPH oxidase. Furthermore, anti-VCAM-1 signaling induced the oxidation of PKCα. Oxidized PKCα is a transiently active form of PKCα that is diacylglycerol independent. This oxidation was blocked by inhibition of NADPH oxidase. In summary, VCAM-1 activation of endothelial cell NADPH oxidase induces transient PKCα activation that is necessary for VCAM-1-dependent transendothelial lymphocyte migration.

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INFLIXIMAB REDUCES AORTIC BMP2-MSX2-WNT SIGNALS AND VASCULAR CALCIFICATION IN DIABETIC LDLR$^{-/P-}$ MICE. Z. Al-Aly, D.A. Towler, Saint Louis University, St. Louis, MO.

Medial artery calcification (MAC) is common in patients with type 2 diabetes mellitus (T2DM) and end-stage renal disease (CKD5). Low-grade arterial inflammation is common to both conditions, and elevated levels of TNF-α have been reported in both DM and CKD5. We hypothesized that TNF-α may play a role in the MAC of T2DM. Therefore, we studied the effects of inhibiting TNF-α in male