

### Tubercular peritonitis

As reported by others we too found that sonography is more sensitive in detecting fine septations in patients with ascites. In the present study sonography detected septations in ascitic fluid in two patients with tubercular peritonitis, not shown on CT. In our study omental and mesenteric changes were better seen on CT as compared to sonography with CT showing greater number of lesions involving these structures. Peritoneal thickening and nodules were also better documented on CT as compared to sonography. In 1993, Denton and Hossain reported that in patients with excess bowel gas, those with ascites and with ill defined mass, computed tomography is better able to provide a clue to the origin of the mass and its composition. Demirkazik et al (1996)<sup>15</sup> reported that computed tomography can demonstrate peritoneal thickening, omental mass, and thickening of the bowel wall and the mesentery better than sonography.

Shah (1992)<sup>16</sup> reported high density ascites; mesenteric and omental thickening and disorganized soft tissue densities with fluid and bowel loops forming an irregular mass; ill defined mass and associated low density lymphadenopathy as the findings of tubercular peritonitis on computed tomography.

So we see that the findings of complex nature ascites, omental caking, mesenteric infiltration with bowel adhesion, bowel thickening, rim enhancing lymphadenopathy and hepatosplenic involvement indicate a inflammatory pathology like tuberculosis.

### SOLID VISCERA INVOLVEMENT

Macronodular form of hepatosplenic TB with tubercles ranging in size from 1 to 3 cm is a rare manifestation of disease. In our study, there were 4 (14%) cases with liver involvement, 2 (7%) with splenic involvement and only 1 (3%) case of pancreatic tuberculosis, out of 5 cases with solid organ involvement.

Solid organ involvement was detected almost equally by both sonography and CT. the sonography detected focal liver lesions in 3 patients whereas CT detected focal lesions in 4 patients in present study. In a study by Shiekh et al (1995)<sup>13</sup> computed tomography and sonography gave the similar results regarding the detection of hepatic and splenic lesions.

Bernhard et al (2000)<sup>17</sup> reported that abdominal CT scan was the most useful diagnostic imaging study, increasing the suspicion of TB in 9 of 13 patients in whom a CT scan was performed. Andronikou et al (2002)<sup>18</sup> reported that on CT the constellation of findings is highly suggestive of the diagnosis of abdominal TB and, used in conjunction with clinical and laboratory data, should narrow the differential considerably.

In summary, multislice spiral CT has the ability to simultaneously and exquisitely demonstrate changes in the bowel, lymph nodes, peritoneum, mesentery and solid organs. In our study, in evaluating the cases of abdominal TB we found that multislice spiral CT detected lymphadenopathy in greater

number of patients as compared to previous studies in literature done on spiral or conventional CT scanner; also the internal characteristics of the lymph nodes like central necrosis and calcification were particularly better appreciated on CT as compared to sonography.

MSCT findings of bowel wall thickening associated with areas of narrowing correlated well with the barium findings with few exceptions. MPR images possible in multislice spiral CT were very useful especially in demonstrating ileocecal region involvement like barium studies except for mucosal detail. Sonography was less sensitive in detecting bowel wall thickening particularly in small bowel as compared to CT. CT also better shows findings in the surrounding structures. Omental, peritoneal and mesenteric changes were better seen on CT as compared to sonography with CT demonstrating more number of lesions in these structures. Solid organ involvement was detected almost equally by both sonography and CT.

So it is concluded that multislice spiral CT is the modality of choice to demonstrate the wide spectrum of findings seen in patients of abdominal TB. Combination of this spectrum of findings may help in early diagnosis of abdominal TB in patients with clinical suspicion.

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### LITERATURE REVIEW

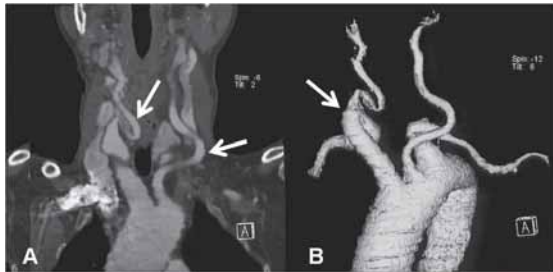
#### Vitamin D Status in Healthy Indians Aged 50 Years and Above

R. K. Marwaha, N. Tandon, M. K. Garg, et al. *JAPI* 2011, 59, 706-709

**Introduction:** There is widespread prevalence of vitamin D deficiency from new-born to infancy, childhood and adult male and females (non-pregnant, pregnant and lactating). However, there is limited information of the vitamin D status in elderly Indians. **Material and Methods:** The study was carried in 1346 healthy subjects more than 50 years of age residing in Delhi, India. These subjects, who were divided in two groups: Group-1 (50 - <65 years) and Group-2 (>65 years), underwent anthropometric, biochemical and hormonal evaluation for vitamin D status Bone mineral density was measured by dual X-ray absorptiometry. **Results:** There were 643 males and 703 females, with a mean age of 58.0 ± 9.5 years (range 50-84 years). Vitamin D deficiency [VDD, serum 25(OH)D levels < 20 ng/ml] was present in 1228 (91.2%) and Vitamin D insufficiency [VDI, serum 25(OH)D levels 20-30 ng/ml] in 92(6.8%). There was no significant difference in prevalence of either VDD or VDI between two age groups and sexes. Serum 25(OH)D levels were negatively correlated with PTH levels (r -0.027, p <0.00001) and BMI (r -0.128, p 0.05). Prevalence of secondary hyperparathyroidism increased from 14.1% to 43.1% from VDI to severe VDD. PTH levels started rising at vitamin D level < 30 ng/ml. However, more than 50% of subjects with severe VDD had PTH levels within normal range. High prevalence of osteopenia (50.2%) and osteoporosis (31.2%) was observed in this population. **Conclusion:** Hypovitaminosis D is universal above the age of 50 years in north India. Absence of a PTH response was observed in more than 50% of individuals with VDD, the cause of which merits further evaluation. Normal bone mass was observed in only 18.6% of study subjects.



**Fig. 5:** Bilateral internal carotid artery aneurysms. (A) Oblique coronal thick MIP image clearly showing the saccular aneurysm of right internal carotid artery (arrow) with marked tortuosity of right internal carotid artery. (B) Shaded surface display projection using Multislice CT showing saccular aneurysm (arrows) with tortuosity of bilateral internal carotid arteries in a single image.



**Fig.6:** Carotid space pseudomass. (A) Coronal thick MIP showing markedly tortuous bilateral common carotid arteries (arrows). (B) Shaded surface display projection using Multislice CT showing tortuous bilateral common carotid and subclavian arteries with high bifurcation of the brachiocephalic artery (arrow).

carotid vessels as the cause of the mass (fig-6). Additionally MSCT revealed the fusiform aneurysm of right subclavian artery. All this information was displayed in a single image. Also the diagnosis was established beyond doubt in the patient with anterior jugular phlebectasia by clearly showing the saccular dilatation of anterior jugular vein.

In patients with malignant cervical mass lesions CT examination clearly revealed the extent of the lesions with excellent demonstration of the invasion of adjacent structures, vascular encasement and thrombosis. In the patient with anaplastic carcinoma of thyroid, CT clearly demonstrated the invasion of trachea, esophagus and prevertebral muscles with a clear demonstration of the encasement of right carotid and jugular vessels on multiplanar reconstruction including inoperability.

CT appearances were diagnostic in patients with cervical lipoma, mesenteric cysticercosis, cervical lymphangioma, and thyroglossal duct cyst. However nonspecific imaging findings were responsible for only 62% accuracy of CT in prediction of the final diagnosis.

The reduction in imaging time possible in multislice CT scanners has facilitated optimal contrast enhancement during CT of neck, chest, abdomen and pelvis, in certain patients like those having lymphoma, using a single i.v. contrast material bolus. This fact was re-emphasized time and again in various cases in our study, especially in cases with vascular lesions.

A very important aspect about the Multislice CT examination in pediatric patients, as found in our study, was the negligible frequency and severity of the motion artifacts in the studied cases. In none of the cases studied by us were motion artifacts encountered to the extent so as to seriously hamper the diagnostic quality of the images. No major information loss was noted in any case due to these artifacts. Sedation was required in only one patient.

Thus, the advent of multislice CT scanners, in addition to strengthening the already proven efficacy and augmenting the already high diagnostic accuracy, has provided amicable solution to many questions unanswered by the conventional imaging modalities; like longer acquisition time, degradation of informative data due to motion artifacts and utility as a single modality in accurate assessment and staging of various tumors and other pathologic conditions. With the advantages of improved vascular contrast enhancement; increased detection of lesions; and multiplanar three dimensional reconstructions, multislice spiral CT should be one of the modalities of choice in the evaluation of neck masses.

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## LITERATURE REVIEW

### Efficacy of Glycated Albumin (GA) in Comparison with Glycated Haemoglobin (HbA1c) in Type 2 Diabetic Subject in India

Satyavani Kumpatla, Priyanka Tilak, Vijay Viswanathan *J. Med. education and Research* 2001, 13, 6-10

The study was planned to determine the efficacy of GA in comparison with HbA1c among type2 diabetic subjects. A total of 94 type 2 diabetic (group2) subjects were selected for this prospective study and were compared with 50 non diabetic controls (group1). The subjects were reviewed for a period of 3months. Anthropometric, blood pressure, plasma glucose, GA and HbA1c measurements were done at baseline, 1st and final follow up visits for all the subjects. GA levels strongly correlated with HbA1c% both in control and study group. The mean GA and HbA1c values were significantly lower at the baseline and during follow up visits in controls than in study subjects ( $p < 0.001$ ). GA, HbA1c and the ratio decreased significantly within 4weeks, but GA showed a significantly larger decrease than HbA1c. There was no significant difference in the GA% after 3months. GA may be a useful marker for assessing short term glycemic changes in type2 diabetes.