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**Title:** Discrimination between pleural thickening and minimal pleural effusion using color doppler chest ultrasonography

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**Body:** Background: The discrimination of pleural thickening from minimal pleural effusion may be difficult as both lesions appear anechoic on gray scale ultrasound, hence, "free of echoes" does not confirm the presence of pleural fluid. Aim of the study: To evaluate the value of color doppler chest ultrasound in differentiating minimal pleural effusion from pleural thickening and to compare it with gray scale ultrasound. Patients and methods: This analytic cross- sectional study was done prospectively on 40 patients who presented with pleural based opacity in their chest radiographs compatible with minimal pleural effusion. Gray scale ultrasound was done for all patients then color doppler ultrasound examination was applied to detect the presence or absence of fluid color sign which indicate the presence of pleural fluid. The presence or absence of pleural effusion was confirmed by aspiration of pleural fluid. Results: Although the sensitivity of real time gray scale ultrasound in detecting minimal pleural effusion was 95.5%, its ability to differentiate it from pleural thickening was low (specificity was 33%, and accuracy was 67%). This can be improved greatly by application of the color doppler examination where the specificity reached 100% while the sensitivity was 91% and accuracy was 95%. Conclusions: Application of color doppler examination increases the accuracy of chest ultrasound to discriminate pleural thickening from minimal pleural effusion.