

Modified Transverse-Vertical Gross Examination: A Better Method for the Detection of Definite Capsular Invasion in Encapsulated Follicular-Patterned Thyroid Neoplasms

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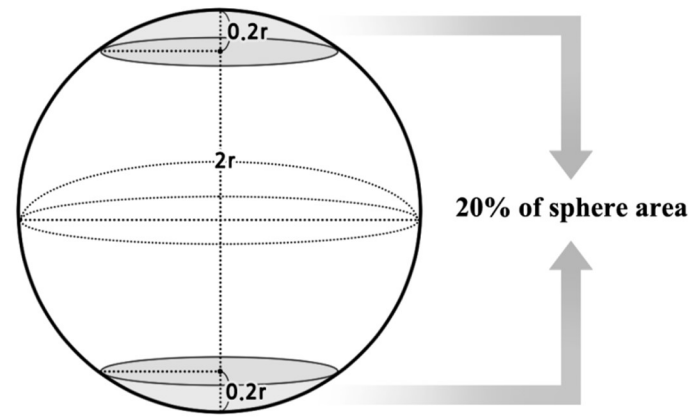
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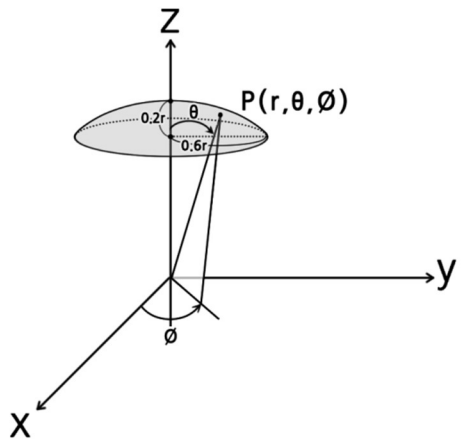
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A



#Area Calculation



$$0 \leq \theta \leq K \left(\sin k = \frac{6}{10}, \cos k = \frac{8}{10} \right)$$

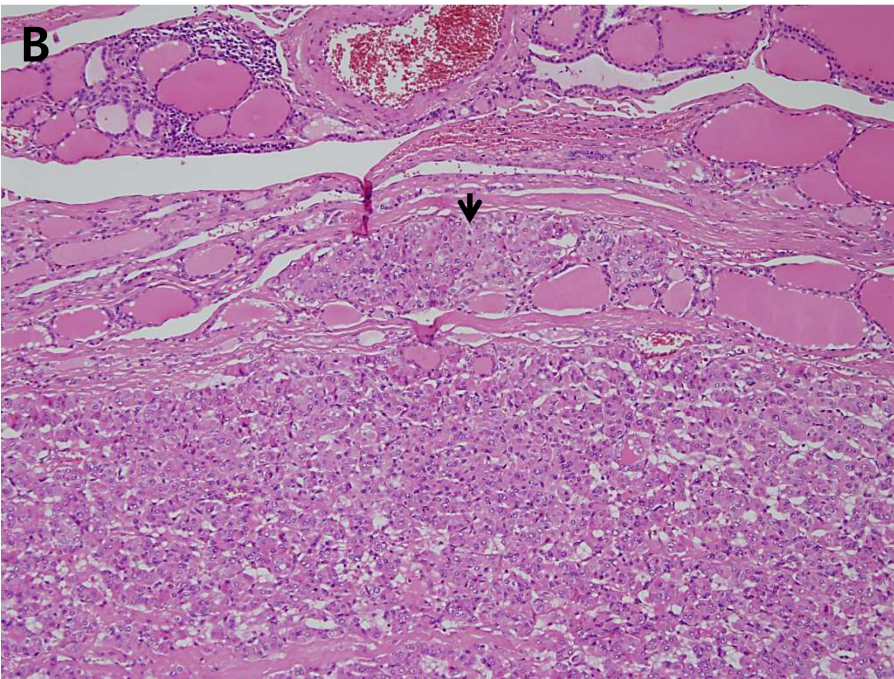
$$0 \leq \phi \leq 2\pi$$

$$\begin{aligned} S &= \int_0^{2\pi} \int_0^k r^2 \sin \theta \, d\theta \, d\phi \\ &= \int_0^{2\pi} r^2 \left[-\cos \theta \right]_0^k \, d\phi \\ &= r^2 \int_0^{2\pi} 0.2 \, d\phi \\ &= 0.4\pi r^2 \end{aligned}$$

#Ratio of Upper and Lower area to Whole Sphere area. (%)

$$= \frac{0.4\pi r^2 \times 2}{4\pi r^2} \times 100 = 20\%$$

B



C

