This puzzle is a variation on a past Putnam problem. Consider a triangle $ABC$ and let:
- $Y$ be the midpoint of $BC$,
- $X$ be the common intersection of the altitudes,
- $Z$ the foot of the altitude from $A$,
- and finally $O$ the center of the circumscribed circle.

Suppose that $OXZY$ forms a rectangle.

Let $|OX| = 1$ and $r = \frac{|OY|}{|OX|} = |OY|$. Find

$$\lim_{r \to 0} \frac{\text{area}(\triangle ABC)}{\text{area}(\square OXZY)}$$

[Hint: consider setting up coordinates such that $O$ is the origin, and $X$ is the point $(1, 0)$, and $Y$ is $(0, r)$.]