$\{p + D_0 + D_\lambda\}_{D_\lambda \sim D_0}$
are all hyperplane sections of $E_D \subset \mathbb{P}^3$, and so p must be collinear with the points of D_0.

⌈ Clearly, $p + D_0 + D_\lambda \sim p + 2D_0$. Since $\iota^* H^0(\mathbb{P}^3, \mathcal{O}(H)) = H^0(B, \mathcal{O}(D))$ by P177, $\exists$ a hyperplane in $\mathbb{P}^3$ s.t its intersection with E_D is $p + D_0 + D_\lambda$ ($\because$ $\exists$ a section σ on E_D s.t $(\sigma = 0) = p + D_0 + D_\lambda$.
$\Rightarrow$ Each $p + D_0 + D_\lambda$, $D_\lambda \sim D_0$, is a hyperplane section of $E_D \subset \mathbb{P}^3$. Suppose $H_1 \cdot E_D = p + D_0 + D_{\lambda_1}$ and $H_2 \cdot E_D = p + D_0 + D_{\lambda_2}$. $\Rightarrow$ $H_1 \cap H_2$ contains p and points in D_0. $\deg D_0 = 2$.
⌋

The lines $\{L_\lambda = \overline{pD_\lambda}\}_{D_\lambda \sim D_0}$, containing three points of E_D, must lie on the quadric Q; it follows that

$$Q = \cup L_\lambda$$

is a singular quadric with singular point p.

⌈ Since $D_\lambda \sim D_0$, by the same argument, i.e., by considering $2D_\lambda + p$, we can conclude that $\overline{p, D_\lambda}$ is a line. $\Rightarrow$ $L_\lambda = \overline{p, D_\lambda}$ $\Rightarrow$ $\#(L_\lambda \cdot Q) \geq 3$ $\Rightarrow$ Since Q is quadric, $Q \supset L_\lambda$. $\Rightarrow$ $Q \supset \bigcup_{D_\lambda \sim D_0} L_\lambda$.

$\Rightarrow \dim |D_0| = \dim \{D_\lambda \mid D_\lambda \sim D_0\} = h^0(D_0) - 1 = 2 - 1 = 1$