A 24-year-old female patient presents with right upper quadrant abdominal pain. She denies a family history of liver disease or liver tumors. Her only medication is oral contraceptive pills. Imaging shows a 6-cm mass with a central stellate scar. Which of the following is the most likely factor initiating or underlying development of this lesion?

A. Vascular malformation  
B. Chronic hepatitis B infection  
C. Beta catenin activating mutations  
D. Non-alcoholic fatty liver disease and metabolic syndrome  
E. Mutation in the p53 gene

Answer: A

Rationale: The described lesion is most likely focal nodular hyperplasia (FNH). FNH is the second most common “tumor” found in the liver. It is most common in female patients of reproductive age, though they can also be found in male patients. While use of oral contraceptive agents has been previously implicated in the pathogenesis of this disease, this theory has been largely disproven. Rather, FNH are believed to occur because of a hyperproliferative response to the presence of a localized vascular malformation.