

Little Things

A pinhole in a copper line, and a ceiling that told on it months later.



Likely Cause

The evidence suggests the leak likely originated from a pinhole failure in the copper refrigerant or condensate piping associated with the attic HVAC system. Pinhole leaks in copper tubing most commonly develop from long-term corrosion rather than a sudden failure. Factors such as formicary corrosion (sometimes called “ant’s nest” corrosion), manufacturing defects, vibration where the tubing rubs against framing, exposure to acidic building materials, or prolonged moisture can slowly thin the copper until a microscopic hole develops. Because these openings are extremely small, they often release only a tiny amount of water over an extended period, making the problem difficult to detect during its early stages.



The attic line above the closet after temporary repair

Why the Ceiling Looks Like This

The staining and visible mold growth on the closet ceiling indicate that moisture was likely present for an extended period rather than resulting from a single leak event. Small, continuous leaks frequently allow moisture to wick into drywall insulation and surrounding building materials, where it remains trapped. Over time, repeated wetting and drying cycles create the ideal environment for staining, mildew, and mold growth, often producing multiple water spots as moisture migrates through the drywall before finally becoming visible on the finished ceiling surface. By the time staining appears inside the living space, the leak has often been active far longer than most homeowners realize.



The closet ceiling : the first thing anyone actually saw.

How Long Could This Have Been Happening?

While it is impossible to determine an exact timeline without opening the ceiling and inspecting the HVAC system, damage of this nature commonly develops over a period of several months and, in many cases, can continue unnoticed for a year or more. A pinhole leak may release only a few drops at a time, but over thousands of HVAC operating cycles those small amounts accumulate into significant moisture intrusion. Routine attic inspections and seasonal HVAC maintenance often identify these types of issues before interior damage becomes visible, underscoring why small maintenance items can prevent much larger and more expensive repairs.

In this particular case, the damage appears to be surface only, with no ducts containing mold, though in South Louisiana, that's never a perfectly accurate statement. A thorough cleaning of the ceiling (bleach), sealing the water spots, and repainting this ceiling has it looking like new, but only after having allowed the repair to "prove" that's the only issue.

This is what we mean by little things. Somebody has to be looking.