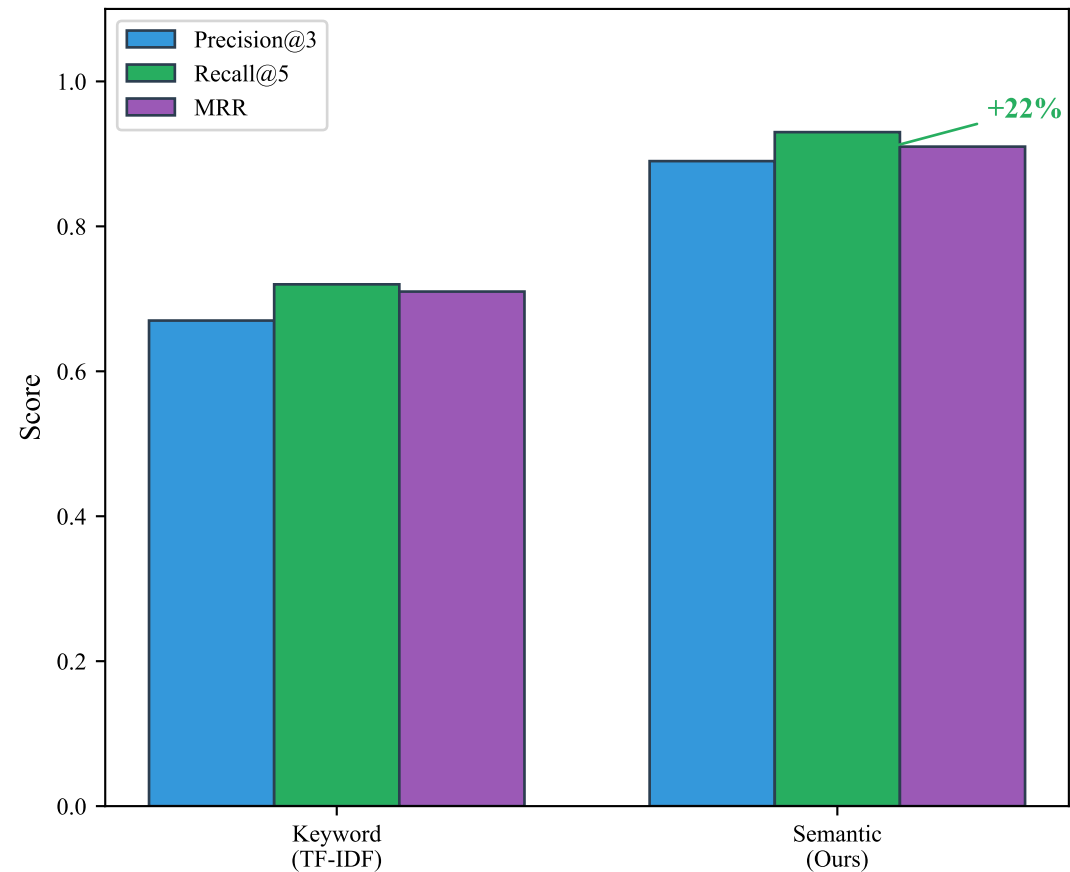


**(a) Retrieval Quality Metrics**



**(b) Example Semantic Matches**

**Query: "tumor in outer lung"**

Keyword: X No match

Semantic: + "peripheral adenocarcinoma" (0.65)

**Query: "central airway mass"**

Keyword: X Partial match

Semantic: + "squamous hilar location" (0.71)

**Query: "hazy opacity on CT"**

Keyword: X No match

Semantic: + "ground-glass opacity" (0.46)