Recurrent Inguinal Hernia

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Algorithmic Approach

A. Inguinal hernia recurrence rates are reportedly between 1% and 40% depending on the type of initial repair technique [1]. Similar to a primary inguinal hernia, the first step in the evaluation of a patient with a recurrent inguinal hernia is a thorough history. The patient may present with a groin bulge at the site of a prior hernia repair. More commonly, the presenting symptom of a recurrent inguinal hernia is pain or discomfort. It is important to assess for risks of recurrence, including prior repair technique, factors that contribute to poor healing (immunosuppression, diabetes, infection, smoking, and obesity), and genetics (collagen synthesis disorders).

B. Physical exam remains the initial method in the diagnosis of a recurrent inguinal hernia. A bulge or mass can be palpated for by invaginating the tip of the examiner's index finger into the external ring while the patient coughs or performs a Valsalva maneuver. However, in the recurrent inguinal hernia, physical exam may not always be diagnostic.

C. When the physical exam findings are equivocal, imaging modalities may be helpful. Ultrasound should still be used as the initial modality as it is an inexpensive and effective tool, but its sensitivity is lower in recurrent compared to primary inguinal hernias. When the ultrasound is non-diagnostic, cross-sectional imaging such as computed tomography (CT) or magnetic resonance imaging (MRI) may provide a more consistent and detailed view of the groin anatomy. If an inguinal hernia is not detected on cross-sectional imaging, other differential diagnoses should be pursued. It is especially important to differentiate chronic groin pain from recurrence.

D. Once the diagnosis of recurrent inguinal hernia is established, either by physical exam, imaging, or both, the next step is to assess how symptomatic the patient is.

E. Because redo hernia repairs are associated with higher risk of complications and recurrence rates and the risk of strangulation is low, watchful waiting is a reasonable treatment approach in the asymptomatic or minimally symptomatic patient [2].

F. For symptomatic inguinal hernias, the next step is to establish the reducibility of the hernia. If the mass is incarcerated, it is important

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to assess for signs of strangulation (fever, tenderness, erythema, or overlying skin changes). If strangulation is suspected, blood work such as white blood cell count or lactate can be informative.

G. If the hernia is incarcerated but not strangulated, manual reduction may be attempted. If the hernia cannot be reduced manually or there is evidence of strangulation, then emergent repair is indicated. The approach to emergent repair is similar to that of the emergent primary hernia repair and depends on surgeon preference, experience, and expertise.

H. If the hernia is reducible, elective repair in an outpatient setting is recommended. The operative repair technique for a recurrent inguinal hernia depends on the prior technique of repair and surgeon expertise.

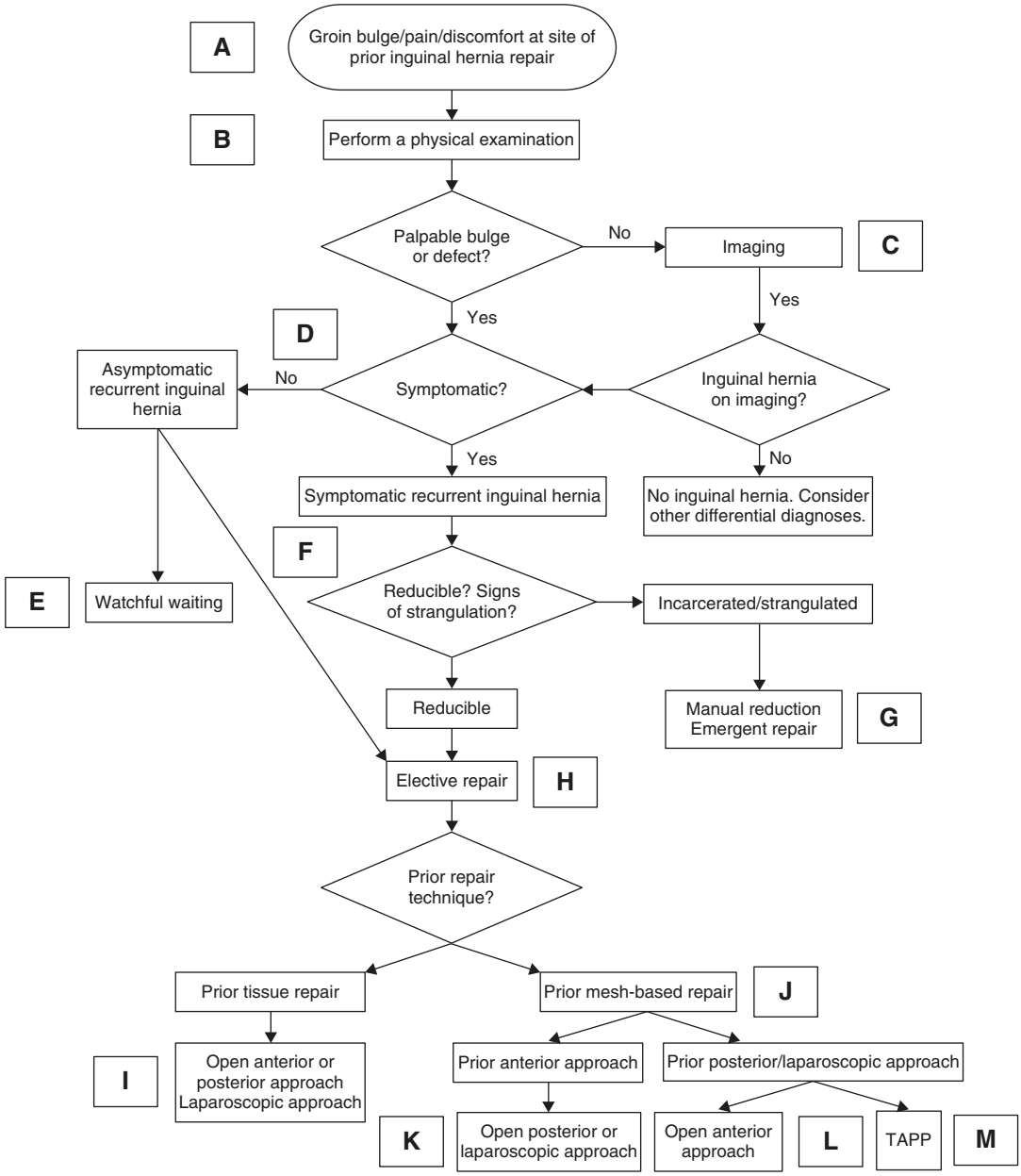
I. If the prior repair was a primary tissue repair, the redo operation should be a mesh-based repair if not otherwise contraindicated and may be approached from either the open anterior or posterior approach. For open anterior repairs, the Lichtenstein tension-free mesh repair, in which a prosthetic mesh is used to reinforce the inguinal floor, is recommended. For open posterior repairs, either transinguinal preperitoneal (TIPP) or transrectus sheath extra-peritoneal (TREPP) technique may be used to enter the preperitoneal space and a prosthetic mesh used to cover the entire myopectineal orifice. If the recurrence is bilateral or if the patient has a primary hernia on the contralateral side, a Stoppa repair through a lower midline or Pfannenstiel incision is advisable to address both sides simultaneously. If surgical expertise is available, a minimally invasive (laparoscopic or robotic) approach is appropriate as well [3]. Either the totally extraperitoneal (TEP) or transabdominal preperitoneal (TAPP) technique may be used [4]. In TEP, a specialized balloon is passed along the posterior rectus sheath and is used to dissect the preperitoneal space. The hernia sac is reduced and a prosthetic mesh is used to cover the entire myopectineal orifice. The TAPP technique is performed in the same manner except that the peritoneal cavity is first entered and then the peritoneum is incised to enter the preperitoneal space.

J. If the prior repair was a mesh-based repair, the redo operation technique depends on the original approach.

K. If the original repair was performed using an open anterior approach, a posterior approach is advised for the redo operation given lower complication rates and the ability to operate in the non-scarred field. Depending on surgeon expertise, either an open posterior (TIPP, TREPP, or Stoppa repair) or laparoscopic approach (TEP or TAPP) may be used.

L. If the original repair was performed using a posterior approach (either open posterior or laparoscopic), an open anterior approach, such as the Lichtenstein technique, is advisable for the redo operation.

M. If surgical expertise is available, it is reasonable to attempt the redo operation laparoscopically through a transabdominal preperitoneal (TAPP) approach. The potential advantage of this technique is the ability to assess and fix the problem from the prior repair and this may be performed in conjunction with an open anterior technique.



Algorithm 190.1

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