

comparable with other PD series. In a fiscally constrained health care environment, the cost of surveillance is important. However, the median cost of surveillance of 1 patient (\$2103) compares favorably with the average cost of intensive care unit care after a PE (\$9898 per day) and to the benefit of potentially reducing mortality rates from PE.

In the absence of a method to risk stratify patients, a DVT surveillance program is justified. The Caprini score is a common method for risk assessment of DVT. However, all patients in this study were high risk, and in this high-risk cohort, Caprini scores lacked discriminatory ability to differentiate which patients developed DVT and which did not.

The authors should be commended on their model approach to attacking a clinical problem. In 2004, they identified a complication that had a significant negative

impact on patient outcomes.¹ The developed a strategy to attempt to reduce the impact of this complication, prospectively studied it, and presented their results.

References

1. Sugarbaker DJ, Jaklitsch MT, Bueno R, Richards W, Lukanich J, Mentzer SJ, et al. Prevention, early detection, and management of complications after 328 consecutive extrapleural pneumonectomies. *J Thorac Cardiovasc Surg.* 2004; 128:138-46.
2. Groth SS, Burt BM, Sugarbaker DJ. Management of complications after pneumonectomy. *Thorac Surg Clin.* 2015;25:335-48.
3. Lauk O, Hoda MA, de Perrot M, Friess M, Klikovits T, Klepetko W, et al. Extrapleural pneumonectomy after induction chemotherapy: perioperative outcome in 251 mesothelioma patients from three high-volume institutions. *Ann Thorac Surg.* 2014;98:1748-54.
4. De León LE, Bravo-Iñiguez CE, Sam Fox S, Tarascio J, Freyaldenhoven S, Lapidot M, et al. Routine surveillance for diagnosis of venous thromboembolism after pleurectomy for malignant pleural mesothelioma. *J Thorac Cardiovasc Surg.* 2020;160:1064-73.

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Commentary: To scan or not to scan: No longer the question for mesothelioma patients after pleurectomy

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CENTRAL MESSAGE

Routine noninvasive screening for deep venous thrombosis should be performed in patients undergoing pleurectomy/decortication for mesothelioma.

Deep venous thrombosis (DVT) is a frequent complication in patients who undergo major surgical procedures, and screening pathways are a constant subject of quality improvement and cost-effectiveness analyses. Malignancy and high-risk surgical procedures are known to increase the risk of DVT significantly, but for patients with mesothelioma undergoing pleurectomy/decortication (P/D), the additive risks and optimal screening/surveillance

procedures are less well defined. De Leon and colleagues¹ from the Brigham and Women’s Hospital have provided an important contribution to our understanding of DVT and the need for screening after P/D in patients with mesothelioma in this issue of the *Journal*.

The authors present their series of 93 patients treated with P/D who participated in a DVT surveillance program. Asymptomatic patients were screened every 7 days with upper- and lower-extremity duplex examinations. Important findings demonstrated DVT in 27 (29%) patients, of whom 9 (33%) were asymptomatic. To give these results

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perspective, the authors calculated DVT risk in their patients using the Caprini Scoring system, which estimated postoperative DVT risk to be 10.7%.² The striking difference between 11% predicted and 29% actual DVT incidence is critical for patients and certainly confirms the necessity of chemical prophylaxis; going further, the authors suggest that their data make an important call for surveillance in these high-risk patients, and we agree. Critics could argue that DVT surveillance is labor intense and costly, but the authors estimate median charges for upper- and lower-extremity ultrasound screening to be only \$2103 per patient. The authors did not address the issue of hospital labor and workflow, but few centers outside of specialty mesothelioma programs have significant P/D annual procedural volume to make this a concern that would outweigh the benefits of ultrasound screening for these patients.

Because of the complexity and operative risk inherent in P/D, these patients frequently have central venous lines for both intraoperative and postoperative monitoring. Not surprisingly, all patients with upper-extremity DVT had a

central line in place in the Brigham series. The series was not powered for subset analysis of this population, but providers should keep this finding in mind when considering options for early central line removal and DVT surveillance.

In our minds, in aggregate these data provide sufficient evidence to support noninvasive screening for DVT in patients who have undergone P/D. Future studies will undoubtedly provide more evidence for protocols in terms of frequency and interval of screening, but it seems that the need for routine DVT screening for mesothelioma patients undergoing P/D is no longer a question.

References

1. De Leon LE, Bravo-Iniguez CE, Fox S, Tarascio J, Freyaldenhoven S, Lapidot M, et al. Routine surveillance for diagnosis of venous thromboembolism after pleurectomy for malignant pleural mesothelioma. *J Thorac Cardiovasc Surg.* 2020;160:1064-73.
2. Grant PJ, Green MT, Chopra V, Bernstein SJ, Hofer TP, Flanders SA. Assessing the Caprini Score for risk assessment of venous thromboembolism in hospitalized medical patients. *Am J Med.* 2016;129:528-35.