

Radyolojide Tıbbi Hizmet Kaynaklı Hata ve Malpraktis

Onur BUĞDAYCI¹

Nurşen TURAN YURTSEVER²

Giriş

Tanısal radyolojinin amacı yapılan bir görüntülemedeki tüm anormal bulguları tespit etmek ve bunlardan doğru bir tanıya ulaşmaktır (1). Dünyada yılda yaklaşık 1 milyar radyolojik inceleme yapıldığı tahmin edilmektedir (2). Radyolojinin hasta yönetimine katkısı ölçülemese de bu katkının ciddi boyutlara vardığı tahmin edilebilir (3).

Tümüyle görsel algıya ve yoruma dayalı olarak, histopatolojik ya da mikrobiyolojik değil, tahmini bir tanı sunar (4). Görüntülerin değerlendirilerek normal-anormal, kanser-benign gibi kesin sınırlarla ayrılmış tanı koymak genellikle mümkün olmamaktadır. Çoğu zaman hastanın öyküsü, kliniği, önceki görüntülemeleri ve fark edilmeyen bilişsel yanlışlıklar bu sürece etki eder (5). Kişisel ve çevresel faktörlerin tanısal doğruluğa etki ettiğini belirtmiştir. Kişisel faktörler arasında kişinin patolojiyi normalden ayırt edebilme yetisi, bir

ya da birkaç ayırıcı tanı verebilme becerisi, eğitimi, zekâsı, konsantre olma becerisi ve algısı sayılabilir. Çevresel faktörler arasında ise bölünme, yorgunluk ve teknik etkenler gibi birçok parametre bulunmaktadır (6).

Tıbbi hata kavramı, 1999 yılında Institute of Medicine tarafından yayınlanan “*To Err Is Human: Building a Safer Health Care System*” (İnsan Hata Yapar: Daha Güvenli Sağlık Sistemi İnşa Etmek) isimli makale ile popüler olmuştur. Bu rapor 1997 yılında ABD’de hastaneye yatırılan yaklaşık 44.000-98.000 Amerikalı’nın önlenebilir tıbbi hatalar nedeniyle hayatını kaybettiği tahmin etmiştir. Bu rakamlara tıbbi hatalar nedeniyle zarar gören fakat hayatını kaybetmeyen hastalar dahil edilmemiştir (4).

Literatürde tıbbi hata planlanan tedavi/işlemin hedeflendiği gibi sonuçlandırılmaması veya hedefe ulaşmak için yanlış planlama yapılması; bir müdahalenin yapılarak ya da

¹ Dr. Öğr. Üyesi, Marmara Üniversitesi Tıp Fakültesi, Radyoloji AD., onur.bugdayci@marmara.edu.tr

² Prof. Dr., Marmara Üniversitesi Tıp Fakültesi, Adli Tıp AD., turannursen@gmail.com

Kaynaklar

- Pitman AG. Perceptual error and the culture of open disclosure in Australian radiology. *Australas Radiol.* 2006; 3(50):206-211.
- Bruno MA, Walker EA, Abujudeh HH. Understanding and Confronting Our Mistakes: The Epidemiology of Error in Radiology and Strategies for Error Reduction. *Radiographics.* 2015; 6(35):1668-1676.
- Chrysikopoulos H. *Errors in Imaging.* 2020. Springer, Cham, Switzerland.
- Romano L, Pinto A. *Errors in Radiology*, 1 ed. 2012. Springer, Milano, Italia.
- Brady AP. Error and discrepancy in radiology: inevitable or avoidable? *Insights Imaging.* 2017; 1(8):171-182.
- Muroff LR, Berlin L. Speed Versus Interpretation Accuracy: Current Thoughts and Literature Review. *AJR Am J Roentgenol.* 2019; 3(213):490-492.
- Makary MA, Daniel M. Medical error-the third leading cause of death in the US. *Bmj.* 2016;(353):i2139.
- Mafeld S, Oreopoulos G, Musing ELS, Chan T, Jaber A, Rajan D. Sources of Error in Interventional Radiology: How, Why, and When. *Can Assoc Radiol J.* 2020; 4(71):518-527.
- Jones DN, Thomas MJ, Mandel CJ, Grimm J, Hannaford N, Schultz TJ et al. Where failures occur in the imaging care cycle: lessons from the radiology events register. *J Am Coll Radiol.* 2010; 8(7):593-602.
- Tarkiainen T, Turpeinen M, Haapea M, Liukkonen E, Niinimäki J. Investigating errors in medical imaging: medical malpractice cases in Finland. *Insights Imaging.* 2021; 1(12):86.
- Bruno MA. 256 Shades of gray: uncertainty and diagnostic error in radiology. *Diagnosis (Berl).* 2017; 3(4):149-157.
- Stec N, Arje D, Moody AR, Krupinski EA, Tyrrell PN. A Systematic Review of Fatigue in Radiology: Is It a Problem? *AJR Am J Roentgenol.* 2018; 4(210):799-806.
- Hanna TN, Lamoureux C, Krupinski EA, Weber S, Johnson JO. Effect of Shift, Schedule, and Volume on Interpretive Accuracy: A Retrospective Analysis of 2.9 Million Radiologic Examinations. *Radiology.* 2018; 1(287):205-212.
- Kim YW, Mansfield LT. Fool me twice: delayed diagnoses in radiology with emphasis on perpetuated errors. *AJR Am J Roentgenol.* 2014; 3(202):465-470.
- Busardò FP, Frati P, Santurro A, Zaami S, Fineschi V. Errors and malpractice lawsuits in radiology: what the radiologist needs to know. *Radiol Med.* 2015; 9(120):779-784.
- Mafeld S, Musing ELS, Conway A, Kennedy S, Oreopoulos G, Rajan D. Avoiding and Managing Error in Interventional Radiology Practice: Tips and Tools. *Can Assoc Radiol J.* 2020; 4(71):528-535.
- Higgins M, Herpy JP. Medical Error, Adverse Events, and Complications in Interventional Radiology: Liability or Opportunity? *Radiology.* 2021; 2(298):275-283.
- Lee CS, Nagy PG, Weaver SJ, Newman-Toker DE. Cognitive and system factors contributing to diagnostic errors in radiology. *AJR Am J Roentgenol.* 2013; 3(201):611-617.
- Heriot GS, McKelvie P, Pitman AG. Diagnostic errors in patients dying in hospital: radiology's contribution. *J Med Imaging Radiat Oncol.* 2009; 2(53):188-193.
- Renfrew DL, Franken EA, Jr., Berbaum KS, Weigelt FH, Abu-Yousef MM. Error in radiology: classification and lessons in 182 cases presented at a problem case conference. *Radiology.* 1992; 1(183):145-150.
- Reason J. Human error: models and management. *Bmj.* 2000; 7237(320):768-770.
- McCreadie G, Oliver TB. Eight CT lessons that we learned the hard way: an analysis of current patterns of radiological error and discrepancy with particular emphasis on CT. *Clin Radiol.* 2009; 5(64):491-499; discussion 500-491.
- Waite S, Scott JM, Drexler I, Martino J, Legasto A, Gale B et al. Communication errors in radiology - Pitfalls and how to avoid them. *Clin Imaging.* 2018;(51):266-272.
- Itri JN, Tappouni RR, McEachern RO, Pesch AJ, Patel SH. Fundamentals of Diagnostic Error in Imaging. *Radiographics.* 2018; 6(38):1845-1865.
- Owens EJ, Taylor NR, Howlett DC. Perceptual type error in everyday practice. *Clin Radiol.* 2016; 6(71):593-601.
- Kabadi SJ, Krishnaraj A. Strategies for Improving the Value of the Radiology Report: A Retrospective Analysis of Errors in Formally Over-read Studies. *J Am Coll Radiol.* 2017; 4(14):459-466.
- Rosenkrantz AB, Bansal NK. Diagnostic errors in abdominopelvic CT interpretation: characterization based on report addenda. *Abdom Radiol (NY).* 2016; 9(41):1793-1799.
- Drew T, Vo ML, Olwal A, Jacobson F, Seltzer SE, Wolfe JM. Scanners and drillers: characterizing expert visual search through volumetric images. *J Vis.* 2013; 10(13).
- Rubin GD, Roos JE, Tall M, Harrawood B, Bag S, Ly DL et al. Characterizing search, recognition, and decision in the detection of lung nodules on CT scans: elucidation with eye tracking. *Radiology.* 2015; 1(274):276-286.
- Zhou Y, Boyd L, Lawson C. Errors in Medical Imaging and Radiography Practice: A Systematic Review. *J Med Imaging Radiat Sci.* 2015; 4(46):435-441.
- Waite S, Scott JM, Legasto A, Kolla S, Gale B, Krupinski EA. Systemic Error in Radiology. *AJR Am J Roentgenol.* 2017; 3(209):629-639.
- Castillo C, Steffens T, Sim L, Caffery L. The effect of clinical information on radiology reporting: A systematic review. *J Med Radiat Sci.* 2021; 1(68):60-74.
- Loy CT, Irwig L. Accuracy of diagnostic tests read with and without clinical information: a systematic review. *Jama.* 2004; 13(292):1602-1609.
- Lehnert BE, Bree RL. Analysis of appropriateness of outpatient CT and MRI referred from primary care clinics at an academic medical center: how critical is the need for improved decision support? *J Am Coll Radiol.* 2010; 3(7):192-197.

35. Guite KM, Hinshaw JL, Ranallo FN, Lindstrom MJ, Lee FT, Jr. Ionizing radiation in abdominal CT: undiagnosed multiphase scans are an important source of medically unnecessary exposure. *J Am Coll Radiol.* 2011; 11(8):756-761.
36. Wasser EJ, Prevedello LM, Sodickson A, Mar W, Khorasani R. Impact of a real-time computerized duplicate alert system on the utilization of computed tomography. *JAMA Intern Med.* 2013; 11(173):1024-1026.
37. Sadigh G, Loehfelm T, Applegate KE, Tridandapani S. JOURNAL CLUB: Evaluation of Near-Miss Wrong-Patient Events in Radiology Reports. *AJR Am J Roentgenol.* 2015; 2(205):337-343.
38. Danaher LA, Howells J, Holmes P, Scally P. Is it possible to eliminate patient identification errors in medical imaging? *J Am Coll Radiol.* 2011; 8(8):568-574.
39. Ott LK, Pinsky MR, Hoffman LA, Clarke SP, Clark S, Ren D et al. Patients in the radiology department may be at increased risk of developing critical instability. *J Radiol Nurs.* 2015; 1(34):29-34.
40. Bosmans JM, Peremans L, De Schepper AM, Duyck PO, Parizel PM. How do referring clinicians want radiologists to report? Suggestions from the COVER survey. *Insights Imaging.* 2011; 5(2):577-584.
41. Schwartz LH, Panicek DM, Berk AR, Li Y, Hricak H. Improving communication of diagnostic radiology findings through structured reporting. *Radiology.* 2011; 1(260):174-181.
42. Magrabi F, Ong MS, Runciman W, Coiera E. Patient safety problems associated with healthcare information technology: an analysis of adverse events reported to the US Food and Drug Administration. *AMIA Annu Symp Proc.* 2011;(2011):853-857.
43. Hulson O. Litigation claims in relation to radiology: what can we learn? *Clin Radiol.* 2018; 10(73):893-901.
44. Ekpo EU, Alakhras M, Brennan P. Errors in Mammography Cannot be Solved Through Technology Alone. *Asian Pac J Cancer Prev.* 2018; 2(19):291-301.
45. Monnier-Cholley L, Carrat F, Cholley BP, Tubiana JM, Arrivé L. Detection of lung cancer on radiographs: receiver operating characteristic analyses of radiologists', pulmonologists', and anesthesiologists' performance. *Radiology.* 2004; 3(233):799-805.
46. Brogdon BG, Kelsey CA, Moseley RD, Jr. Factors affecting perception of pulmonary lesions. *Radiol Clin North Am.* 1983; 4(21):633-654.
47. Fileni A, Magnavita N, Mirk P, Iavicoli I, Magnavita G, Bergamaschi A. Radiologic malpractice litigation risk in Italy: an observational study over a 14-year period. *AJR Am J Roentgenol.* 2010; 4(194):1040-1046.
48. Dagli MS, Soulen MC, McGinn C, Mondschein JJ, Clark TWI, Sudheendra D et al. Impact of a Monthly Compliance Review on Interventional Radiology Adverse Event Reporting. *J Am Coll Radiol.* 2019; 1(16):73-78.
49. Baerlocher MO, Kennedy SA, Ward TJ, Nikolic B, Bakal CW, Lewis CA et al. Society of Interventional Radiology Position Statement: Staffing Guidelines for the Interventional Radiology Suite. *J Vasc Interv Radiol.* 2016; 5(27):618-622.
50. Lee MJ, Fanelli F, Haage P, Hausegger K, Van Lienden KP. Patient safety in interventional radiology: a CIRSE IR checklist. *Cardiovasc Intervent Radiol.* 2012; 2(35):244-246.
51. Drew T, Vö ML, Wolfe JM. The invisible gorilla strikes again: sustained inattention blindness in expert observers. *Psychol Sci.* 2013; 9(24):1848-1853.
52. Lakhman Y, D'Anastasi M, Miccò M, Scelzo C, Vargas HA, Nougaret S et al. Second-Opinion Interpretations of Gynecologic Oncologic MRI Examinations by Sub-Specialized Radiologists Influence Patient Care. *Eur Radiol.* 2016; 7(26):2089-2098.
53. Abujudeh HH, Boland GW, Kaewlai R, Rabiner P, Halpern EF, Gazelle GS et al. Abdominal and pelvic computed tomography (CT) interpretation: discrepancy rates among experienced radiologists. *Eur Radiol.* 2010; 8(20):1952-1957.
54. Rosenkrantz AB, Duszak R, Jr., Babb JS, Glover M, Kang SK. Discrepancy Rates and Clinical Impact of Imaging Secondary Interpretations: A Systematic Review and Meta-Analysis. *J Am Coll Radiol.* 2018; 9(15):1222-1231.
55. Geijer H, Geijer M. Added value of double reading in diagnostic radiology, a systematic review. *Insights Imaging.* 2018; 3(9):287-301.
56. Ratwani RM, Wang E, Fong A, Cooper CJ. A Human Factors Approach to Understanding the Types and Sources of Interruptions in Radiology Reading Rooms. *J Am Coll Radiol.* 2016; 9(13):1102-1105.
57. Kansagra AP, Liu K, Yu JP. Disruption of Radiologist Workflow. *Curr Probl Diagn Radiol.* 2016; 2(45):101-106.
58. Alshabibi AS, Suleiman ME, Tapia KA, Brennan PC. Effects of time of day on radiological interpretation. *Clin Radiol.* 2020; 2(75):148-155.
59. Maeda E, Yoshikawa T, Hayashi N, Akai H, Hanaoka S, Sasaki H et al. Radiology reading-caused fatigue and measurement of eye strain with critical flicker fusion frequency. *Jpn J Radiol.* 2011; 7(29):483-487.
60. Berlin L. Malpractice issues in radiology. Perceptual errors. *AJR Am J Roentgenol.* 1996; 3(167):587-590.
61. Berlin L. Radiologic errors and malpractice: a blurry distinction. *AJR Am J Roentgenol.* 2007; 3(189):517-522.
62. Cannavale A, Santoni M, Mancarella P, Passariello R, Arbarello P. Malpractice in radiology: what should you worry about? *Radiol Res Pract.* 2013;(2013):219259.
63. Karataş M, Yakıncı C. Tıbbi Hata Nedenleri ve Çözüm Yolları. *İnönü Üniversitesi Tıp Fakültesi Dergisi.* 2010; 3(17):233-236.
64. Civaner M, Yürür K, Pala K. Sağlık Alanında "Hizmet Kaynaklı Zarar": Hekimler Ne Diyor? 2011. *Türk Tabipler Birliği Yayınları*, Ankara.
65. Kök AN. Hatalı Tıbbi Uygulama (Medikal Malpraktis) İddialarında Otopsinin Önemi. *Uyuşmazlık Mahkemesi Dergisi.* 2016; 7(0):677-685.
66. Berlin L. Malpractice issues in radiology. Informed consent. *AJR Am J Roentgenol.* 1997; 1(169):15-18.
67. Tanrıöver MD, Serteser M, Ünsal İ, Akalın HE. Tanı Hataları: Güvenli ve Yüksek Kaliteli bir Sağlık Sistemi İçin Öncelikli Bir İyileştirme Alanı. 2016. *Acıbadem Üniveristesi Yayını*, İstanbul.