

Urgent Management of Acute Aortic Dissection in a Patient with Severe Anaphylaxis: A Case Study

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Objective: To report a rare case of acute aortic dissection occurring simultaneously with severe anaphylaxis and describe the challenging management strategy employed.

Case Presentation: A 58-year-old female with a history of hypertension presented to the emergency department with sudden-onset severe chest pain, dyspnea, and diffuse urticaria after consuming shellfish. Initial examination revealed hypotension (80/50 mmHg), tachycardia (120 bpm), and stridor. Chest X-ray showed a widened mediastinum, and urgent CT angiography confirmed a Stanford type A aortic dissection. Simultaneously, the patient exhibited signs of anaphylactic shock, including angioedema and bronchospasm. Laboratory tests revealed elevated D-dimer (2.5 µg/mL) and tryptase (45 µg/L) levels [1,2].

Methods: The patient required immediate management of both life-threatening conditions. Treatment for anaphylaxis involved prompt intramuscular administration of epinephrine as the first-line therapy, followed by antihistamines and corticosteroids as adjunctive treatments [3,4]. Simultaneously, the aortic dissection was addressed with careful blood pressure control using beta-blockers and nitroprusside, while preparing for emergent surgery [5,6,7].

Results: The patient's anaphylactic symptoms improved rapidly with epinephrine and supportive care. Once stabilized, she underwent successful emergency repair of the aortic dissection. Postoperatively, the patient's hemodynamics normalized, and she was weaned off vasopressors. Follow-up imaging showed a well-repaired aorta, and allergy testing confirmed shellfish allergy.

Discussion: This case highlights the complex challenge of managing two potentially fatal conditions simultaneously. The urgent need for epinephrine in anaphylaxis conflicted with the requirement for strict blood pressure control in aortic dissection. The successful outcome was achieved through a carefully balanced approach, prioritizing the most immediate life-threatening condition (anaphylaxis) while preparing for definitive treatment of the aortic dissection [7,8]. This case underscores the importance of rapid diagnosis and tailored management in complex emergency scenarios, as emphasized in guidelines for aortic dissection management [8,9].

Conclusion: This case report provides valuable insights into the successful management of acute aortic dissection complicated by severe anaphylaxis. The approach demonstrates the critical

importance of recognizing and addressing multiple life-threatening conditions concurrently and adapting standard protocols to fit unique clinical scenarios.

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