An equivalence in generalized almost-Jordan algebras

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In this paper we work with the variety of commutative algebras satisfying the identity ?((x2y)x - ((yx)x)x)+?(x3y - ((yx)x)x) = 0, where ?, ? are scalars. They are called generalized almost-Jordan algebras. We prove that this variety is equivalent to the variety of commutative algebras satisfying (3? + ?)(Gy(x, z, t) - Gx(y, z, t)) + (? + 3?)(J(x, z, t)y - J(y, z, t)x) = 0, for all x, y, z, t ? A, where J(x, y, z) = (xy)z+(yz)x+(zx)y and Gx(y, z, t) = (yz, x, t)+(yt, x, z)+ (zt, x, y). Moreover, we prove that if A is a commutative algebra, then J(x, z, t)y = J (y, z, t)x, for all x, y, z, t ? A, if and only if A is a generalized almost-Jordan algebra for ? = 1 and ? = -3, that is, A satisfies the identity (x2y)x + 2((yx)x)x - 3x3y = 0 and we study this identity. We also prove that if A is a commutative algebra, then Gy(x, z, t) = Gx(y, z, t), for all x, y, z, t ? A, if and only if A is an almost-Jordan or a Lie Triple algebra.