Parent S with genotype: G_1G_1 (2)

Mate of S (random sample of population) $\Rightarrow f(G_1)=p$, $f(G_2)=q$

Alleles of S	G_1 with $f(G_1)=p$	G_2 with $f(G_2)=q$
G_1 (with $f(G_1)=1$)	$f(G_1G_1)=1\cdot p = p$	$f(G_1G_2)=1\cdot q = q$
G_2 (with $f(G_2)=0$)	0	0

$$\mu_M = f(G_1G_1)\cdot V_M + f(G_1G_2)\cdot V_{12}$$

$$\mu_M = f(G_1G_1)\cdot a + f(G_1G_2)\cdot d$$

$$= p\cdot a + q\cdot d$$

$$BV_M = 2(\mu_M - \mu)$$

$$= 2(pa + qd - [(p-q)a + 2pqd])$$